THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. 85. NEW YORK, SATURDAY, JULY 9, 1904. No. 2.

ORIGINAL ARTICLES.

THE THEORY OF MUTATION IN ITS RELATION TO MEDICINE.[1]

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IN the discussion of the etiology of microbic disease, there enters, remotely it is true, but nevertheless irresistibly, a consideration of that long-laid specter which still starts up in every century of the history of science,—spontaneous generation. Scoff at it, deny it as you may, it is inevitably the direction toward which evolutionary science is drifting. It is foreshadowed in the monism of Häckel, it is touched but not demolished by the innovations of Mivart and of De Vries. Two years ago I had occasion to say:[2] "Certainly if evolutionary doctrine, if the fact of the mutability of the forms of life, means anything, it means that there has not only been a time, but there is every instant a time when matter is becoming endowed with vital energy which has the power to propagate its kind." This was but an unconscious echo of the tendencies of modern biology.

To gravely assert that "the origin of the germs of disease was probably in the remote geological past" is on a level with the faltering plea of a former generation that God ceased His miracles when man began to inquire into them. This drift of modern thought in biology is voiced in the bold suggestion contained in the essay of Dr. Bastian,[3] "On the great importance, from the point of view of medical science, of the proof that bacteria and their allies are capable of arising *de novo*." It is an emphatic plea for the acceptation of the heresy of spontaneous generation. As I have intimated, I am very much disposed to be that kind of a heretic myself, but in the light of recent researches, especially those of De Vries, we are not yet driven to the extremity of Dr. Bastian's suggestion.

I believe the theory of mutation in biology, if it is settled in the affirmative, will have a very important bearing upon our knowledge of the etiology of disease, and this must form an excuse for its intrusion in a medical essay.

It is known to all familiar with Darwin's work that one of the greatest objections, with which the early evolutionists had to contend, was the extent of geological time necessary for the evolution of higher animal life on the theory of natural selection, or in the better chosen term of Spencer, the survival of the fittest. As is well known, Agassiz, to the last, utterly rejected the idea, pointing out the evidence of the sudden appearance on the earth of the lower vertebrates. Mivart so modified the conception as to provide for the sudden birth of species. Darwin himself, though unable to adduce evidence of it even from his stupendous command of facts, expressed the idea that there might be sudden great variations in animals and plants, which, seized upon by natural selection, might produce more profound modification of the structure of living beings than seemed possible in the small range of individual variations on which he pointed out that natural selection does act.

De Vries, a naturalist of Amsterdam, has declared that such shocks or jumps in the life history of species is a fact and that such changes and not the slow process of Darwin are really the origin of species. By experimentation with many varieties of plants, from which he selected the primrose for more extended study, he has observed changes which he calls mutations, and these changes were so sudden and profound that he has come to believe that all species at some time in their life history exhibit an excessive instability from which new and distinct forms arise. "A mutation occurs when one species is formed from another." "A species changes only when it produces others. Or, rather, it does not change, but continues to exist next to the species newly formed."[1] At these times the species are said to be in a period of mutability. With the primrose, De Vries declares that the rate at which he observed new forms, which he dignified with the name of species, was at the ratio of 1.5 per cent., *i.e.*, out of 100 plants arising from seed from one to two new species would be found. "Many species multiply exceedingly rapidly when they are transported to a new region where the conditions are favorable." It seems that it is then that the period of excessive mutability is apt to appear. He admits that the vast majority of the new forms perish from lack of adaptation to their environment.

Now, parenthetically, I must disclaim any ability to act as a critic of this idea of De Vries. It may or may not be similar to that of Mivart. I cannot see how the view of Dastré[2] is justified. I cannot see how it in any way upsets the fundamental idea of Darwin. It seems, if the facts have been properly interpreted, rather to amplify and establish it. I see little difference in principle whether the fittest of these great variations or the fittest of the smaller individual variations survive. It is, of course, a great discovery if true, but it by no means abolishes the necessity for natural selection. Dastré's remark that natural selection causes the death but not the birth of species, is sacrificing accuracy to epigram. Hitherto, in the discussion of evolution, it has not been neces-

[1] Received for publication March 28, 1904.

[2] New York Medical Record, June 26, 1902.
[3] The Lancet, October 31, 1903.

[1] Popular Science Monthly, April, 1903.
[2] Revue de Deux Mondes, July, 1903.

sary to point out that a "sport" or a "mutation" form which immediately perishes seems hardly to be the birth of a new species, any more than a still born or sterile child is the progenitor of a new race.

As I have intimated, I am incapable of judging as to whether these examples of De Vries are recessive and degenerate forms which would all perish from debility were they not artificially grown. If we are to allow degenerate changes to the extent he has observed, I see no reason for denying the possibility of the changes which would survive and propagate under natural conditions. It would seem likely that future observations will show that De Vries has observed extremes of variability, and that there are many intermediate grades from small individual variations up to the forms radically different, capable of propagating their kind and incapable of inbreeding with the parent stem.

I simply desire to point out here, as Dr. Bastian has done for spontaneous generation, how important "the theory of mutation" is to the conception of microbic disease. Let us reflect how it would apply to what we know of the history of contagious diseases, and how we might explain an apparent gap in medical history.

In the decades preceding the middle of the last century, it was the common belief that from time to time the character of certain diseases changed in their clinical manifestations. That, for instance, during a longer or shorter time pneumonia presented sthenic types, suitable for bleeding, followed by asthenic types when such procedures were disastrous. It is occasionally heard to-day from stubborn skeptics, that the type of diphtheria has undergone a change from the severer infections of the days before the introduction of antitoxin, to the milder forms which are exhibited by cases to-day when antitoxin is in universal use. Apropos of this point one need only peruse the descriptions of throat inflammations in the works of Hippocrates to perceive that diphtheria is not sufficient to account for the severity of the cases with which he had to do, while they were much more numerous than the corresponding type of Ludwig's angina, which is a curiosity in modern laryngology. It appears probable that the ancients had forms of throat disease to treat other than we observe to-day. In the history of smallpox and phthisis we are familiar with the rapidity with which a previously isolated race of savages is all but exterminated by the irruption of these diseases among them.

Men have grown more instead of less migratory since Attila poured his Huns into Italy, but to-day it is individuals, not nations, who migrate. The contrary was the rule in the dark ages. The period before the Renaissance was marked by the migrations and the first intercommunications of various branches of the Indo-Germanic races. This was preceded by a period of restlessness, and of migrating invasions into Europe by the yellow, Tartar-Mongolian hordes under Attila, and these only terminated at the death of Genghis Khan. It is in this period of upward of a thousand years after the fall of ancient Rome that we seek the origin of smallpox, scarlet fever, measles, whooping cough, influenza, possibly even syphilis. I am not prepared to say that none of these existed in the five hundred years which stretch from Hippocrates to Galen. It is quite likely, as I have elsewhere pointed out, that the birth of new knowledge, the Renaissance, permitted the differentiation of various diseases not possible even in the palmy days of ancient Greece, but there were men in the world then of as acute a mentality as have ever existed since and yet, empirical classification aside, we search the ancient pages in vain for any sure indication of many a scourge which has since ravaged civilization.[1]

Do the cataclysms of the history of mankind which followed the fall of Rome and ended with the Crusades stand in the same relation to the birth of microbic disease, as do the upheavings of geological strata to the birth of species in the fauna and flora of the world? Did smallpox or scarlet fever spring from some harmless protozoon of the pre-Renaissance? Is measles a side issue of scarlatina? Is the same true of smallpox and cowpox? Did whooping cough originate from influenza?

I do not know whether these questions have been asked before, or whether an answer to them has been attempted or not. If the postulates of De Vries are established, there would seem a hope of knowing something of the origin of disease without tracing it back to a remote geological past, unchanged and unchanging.

The problem is a mixed one, as are all questions dealing with etiology. Change of food, climate and habits must as surely modify human cells and their products, with which students of immunity are at present so absorbed, as do these soils alter the bacteria which feed on them. Thus we may suppose many diseases as the resultants of primordial changes in the cell and the microphyte entered in the dark ages upon a period of mutability similar to the primrose in Holland, after it was carried there from America in 1613.

It is true that this is vague and speculative, but if plants may originate from "others by sudden but small changes, often so small as to be hardly visible to the neophyte, surely diseases may do the same." In the pre-Renaissance they seem indeed to have originated with a shock or jump and since then they have been more or less constant except for the minor changes to which I have alluded as changes in type. Just as with plants they may have been formed from a mother disease which may still exist.

If we are not familiar with radical changes in bacteria, we are becoming familiar with their minor variations, not only of form, but of function in the production of poisons to the animal cell. The tubercle bacillus, we are learning, is a pleomorphic microphyte, with as marked variations of function as of form, but we know nothing yet of the birth of a new species from it, and yet,

[1] The Nose and Throat in Medical History.

though tuberculosis is one of the most ancient of diseases, in view of what has been said above, we may be permitted to imagine, that in prehistoric times some hay bacillus in a period of mutability acquired that minute but sudden change out of which has been evolved the tubercle bacillus deadly to many widely separated groups of animals.

There is a significant fact to bear in mind. The newer the disease, the more limited its range among animals. Phthisis and pneumonia are coeval with the dawning of the history of man; diphtheria can be traced back to the Babylonian Jews. Reports of the influenza are hardly recognizable in the medical literature of the Greeks and Romans but they were the first to emerge from the obscurities of the dark ages. These diseases, somewhat in the order I have mentioned, are widespread in the animal world, but syphilis, smallpox, whooping cough, scarlet fever, measles, of later historical mention are also markedly less widespread in the animal kingdom.

Any student of medical history, familiar with researches in the wider fields of biology, must be struck, in the narrower domains of bacterial research, with the phenomena exhibited by certain families of microorganisms, among which are found parasites poisonous to man. The tubercle bacillus, varying only slightly in form and growth from the hay bacillus, mounts in virulence to man through the turtle and fish bacilli to the microphyte of phthisis pulmonalis. Amidst the great number of reported actinomyces only a few apparently poison the human cell, yet their morphology is all but indistinguishable. I'm not enough of a bacteriologist to speak as to other groups, but I am confident that better equipped observers could point out analogies elsewhere. Considering the countless numbers and the immense rapidity of their multiplication, can we imagine any other division of life in which, so readily as in unicellular organisms, could arise "those changes so small as to be hardly recognizable"? We must seek the evidence of it in the diseases they cause.

It seems to me, therefore, however sympathetic we may be towards Dr. Bastian's belief in spontaneous generation, the phenomena, both biological and historical, of microbic disease do not necessitate its assumption, and we have little ground for it in facts hitherto presented. We should keep it sharply in our minds that, whatever may be the trend toward this view, the labors of Löwenhoeck, Spallanzani, Virchow, Tyndall and Pasteur in the last two hundred years and more, have definitely thrown the burden of proof on its future advocates.[1]

[1] In the mail with this proof came the July number of the *Popular Science Monthly*, which contains an extensive review of recent work relative to the theory of mutation, to which the reader is respectfully referred, as it comes too late for the incorporation in this thesis of any facts which may bear on its application on medicine. It is written by Professor Hubrecht, a Dutch zoologist.

Appointment of Dr. Meyer.—It is announced in the new catalogue of Cornell University that Dr. Adolf Meyer has been appointed Professor of Mental Diseases.

RACE SUICIDE FROM THE GYNECOLOGICAL STANDPOINT.[1] [2]

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IN medicine, as in other walks of life, it is wise to pause at times and to strike a balance. In particular is this true of the department of medicine which my audience cultivates, for in none has there been more ceaseless activity, in none more varying phases of change,—often not of the progressive type.

From the dawn of history woman has been a problem, and her indecision of mind and of body has caused man anxiety untold—it may be because of his equal indecision in make-up. As we stand on our eminence of to-day, and look backward into the valley of gynecology, rich in names of great departed, teeming with much which seemed truth and yet with what to-day we look upon as error, we are far too prone to swell with pride in consideration of the greater light at the summit, yet as we look beyond, toward the future, rash would we indeed be should we venture to predict the brightness ahead. Reflect, however; consider deeply; sift the chaff from the wheat, and you will find that even to-day we are groping in the dark and facing problems of greater moment than the past ever offered, at times indeed, grappling with similar problems as yet unsolved, and as far as human ken—if unbiased—can predict, unsolvable.

Wander back and see the man of immortal memory bent on solving the problem of the cure of vesicovaginal fistula; trace the gradual evolution of pelvic surgery and its merging into the abdominal; think of the years of bodily and of mental toil involved in the elucidation of the cellulitic doctrine and its burial under the weight of the peritonitic doctrine; reflect on the problems offered at the time when the mechanics of the pelvis appealed more precisely, and of the pyramids of pessaries erected only to crumble; consider the age of the intrauterine applicator, of the tampon, of the pelvic 'tinkerings," of the electrical fads. The men who struggled mightily to solve the problems of those days were as honest in intent and as strenuous in endeavor as you and I are to-day, facing as we do the problems of the present and laying the foundations of manifold problems in the future. Notwithstanding the fact that we are better equipped than our gynecic forefathers were, for we possess accurate asepsis, absorbable ligatures, deep experience derived from ample invasion of the peritoneal cavity,—when we strike the balance the enigmas offered us, the dilemmas we are astride of call for the same struggles toward solution as those so well mastered by Sims, Peaslee, Emmet, Thomas, Tait, Spencer Wells, and your own Busey.

Medical gynecology has wellnigh been shelved. The aim, the ambition is surgical. Too often the

[1] Read, by invitation, before the Washington Obstetrical and Gynecological Society, March 4, 1904.
[2] Received for publication March 10, 1904.

uterus, the tubes and the ovaries are roughly handled when the liver, the kidneys, the intestinal tract, constitute the elemental problem. The medical press teems with socalled new suggestions, and old methods resurrected and dubbed novel. The wheel turns, and too frequently the index points to the past, the needle beyond the pelvis, and the new methods and devices become ghosts and nightmares of torment to us. A little more discretion, a little more thought, a little less eagerness in the solution of pelvic and abdominal problems, might spare us many a Waterloo.

In allied branches of medicine, we have seen the practical stamping out of yellow fever from localities wherein it had been endemic for ages; we have witnessed the discovery which nearly robs that scourge of the past—diphtheria, of its terrors; medical men are armed for the extermination of tuberculosis, to such a degree that Boards of Health in many localities demand its report under penalty; puerperal sepsis has wellnigh been eradicated wherever the puerperal woman is under conscientious and educated care; active minds are at work in the endeavor to isolate the germ or toxin of that scourge of the human race,—cancer; such is the record of the present. And yet, to-day, the gynecologist and his broader brother—the general practitioner, appear apathetic in reference to greater scourges, such as those to which I ask your attention tonight.

The problem of great moment which faces us at the present—and I have in mind now not alone gynecologists but also the general practitioner—a problem which is as knotty a one as any which offered to our forefathers, is that which has been not inaptly termed "race suicide."

To the layman "race suicide" means the unwillingness of man to procreate, or of woman to bear children, either because the exigencies of life are so strenuous that it is of vital moment that no more mouths should be opened for food than there exists the wherewithal to supply the food, or else because the demands of social life appeal more to man and to woman than the honor of being termed father and mother. Hence arise resort to the manifold measures for the prevention of conception, and the solicitations to which we are constantly subjected for the interruption of gestation in those who, having sown the seed, should of right carry it to full growth.

This phase of the question concerns us as citizens. The definition is entirely too restricted to satisfy us as physicians and gynecologists. The problem is very complex. The race is suffering from the effects of suicide far more because of inaptitude for conception than from disinclination to assume the obligations which maternity may entail. Disease of the reproductive organs —acquired innocently or deliberately implanted, this is the medical side of the problem—the side with which you as gynecologists are so familiar. Furthermore, immature, incomplete, uncalled-for surgery on the pelvic organs,—this offers another aspect of the problem. To reach a solution of this vital problem, I invite your attention to the chief cause of "race suicide"—the gonococcus, and I shall ask you to endeavor to devise with me the solution of the problem of its extermination, the outcome of which would be a victory greater than any yet won concerning racial integrity, the more so because thereby the gynecologist would be deprived of nearly sixty per cent. of his operative work. Surely a very unselfish aim, and yet in line with that which constitutes the brightest jewel in medicine's crown—preventive medicine.

In the first chapter of Genesis we are told the story of the marvelous creation and the story of the lamentable fall of man. Milton, in his exquisite verse, thus describes a mental trait of our distinguished ancestor, Adam:

"This woman whom thou madest to be my help,
And gavest me as thy perfect gift, so good,
So fit, so acceptable, so divine,
That from her hand I could suspect no ill,
. . . . . .
She gave me of the tree I did eat."

History repeats itself! Let women to-day consult us for the relief of sterility, and man says "it is the woman's fault." Before I have finished with him I shall state facts which should cause the cheeks of this miscalled "lord of creation" to blush, since it is on his shoulders that the blame for the vast proportion of sterile marriages lies, and this is tantamount to "race suicide."

The laity do not realize, and we, as physicians, do not lay sufficient stress in our teaching, on the preponderating influence played by man in the causation of sterility in woman. Ruling out the deformities or the malformations of the male genital organs which deprive him of the power of doing his share in the act of procreation, let us consider man as fully endowed with the *power*, and next consider the manner by which he deprives himself of the power. And further, let us never forget that the faculty of performing the sexual act by no means entails the ability to procreate. Thus then, in laying the onus for the greater proportion of "race suicide" we acquit a fair proportion of males who are impotent through no fault of their own. Possibly the mumps, possibly the acute exanthemata have reacted to such an extent on the seminal vesicles as to have deprived them of function. In about six per cent. of sterility in woman, the etiological factor is man possessed—perhaps—of the power of performing the sexual act and yet lacking the elements which are essential to fecundation. Examination of the semen will at once rule out this small class from the wearing of the onus of blame. Such men we can but pity. The disease which enters chiefly into my argument to-night, as the main factor in the production of "race suicide," is of a different type, since it is acquired deliberately on the part of man—too often, under our present system of education, because man has never been properly warned in regard to its un-

toward consequences on woman, should he enter the state of matrimony.

It is only on reflection and close consideration that the physician realizes the extent to which gonorrhea is responsible, not alone for "race suicide," but also for disease in woman and for blindness in the child. To speak alone of sterility —it has been estimated that nearly 60 per cent. of males have gonorrhea, either acute or latent, and you will recall in the latter respect how cogent to-day is the conclusion reached over a quarter of a century ago by Emil Noegerrath which, in his time, called largely for derision. Nearly 45 per cent. of sterile marriages are traceable directly to gonorrhea. To strike an eminently fair average, in case of sterility, man is at fault in about 20 per cent. This is a percentage based on direct sterility. When we consider the diseases of woman which are traceable to gonorrhea—such as those which involve the tubes, the ovaries, the uterus, and thus interfere either with insemination or with the progress of pregnancy, a fact which in the end amounts to sterility, the percentage of blame attachable to the male rises greatly. I venture to state that it is a fact familiar to all of those present, that were it not for the operative work derivable from abdominal sections performed for disease of the uterine adnexa due to gonorrhea, 60 per cent. of this work would be uncalled for. Thus, in salient figures, appears man's rôle in the production of "race suicide" from the standpoint of gonorrhea.

It will be of moment to interpose here a few words in reference to another coccus which man frequently injects into woman with the result of adding to his already heavy burden of blame for "race suicide"—I refer to the coccus of syphilis. This coccus, whether acquired innocently or not, renders woman incapable, to the fullest extent, of performing one of the purposes for which marriage was instituted—the propagation of the human species. The rôle of syphilis is not by any means as marked as is that of gonorrhea, since the germ of syphilis is not so apt to prevent conception. Woman conceives, but, as a rule, she miscarries, and this, to all intents, amounts to sterility. Therefore, it has become the rule among us, that when a woman is sterile, for the reason that she has never born a child to term, we investigate the man's record.

In short, sterility in woman dependent on disease of uterus, tubes or ovaries, may in about 50 per cent. of the instances be settled by saying: "Ask the man," and he is the so-called lord of creation, strutting about after a fashion which should make the peacock blush. Of all the animal creation he shows the least regard for his mate in that he inserts into her system germs which not alone render her incapable of performing that function so dear to every good woman's heart—the bearing of children, but also implants in her diseases which in the course of time send her to you and to me for operation. I have dealt with man harshly, and yet, poor devil, it is not always his fault. Owing to our utterly inadequate educational methods in matters sexual, owing to the bated breath under which the words gonorrhea (clap) and syphilis (pox) are spoken by fathers and by mothers and by educators and pastors and legislators and, far too often to their shame, by physicians, the youth of our land enter into the nuptial contract utterly ignorant of the consequences, to the women they have sworn to guard and to protect, of an uncured gonorrhea or syphilis. This is where our responsibility as physicians and as gynecologists rests to-day. This is the problem facing us—the education of the laity in regard to the significance of these scourges, these social evils, these causes of "race suicide." I have endeavored to show that man is responsible for sterility in woman in fully 50 per cent. of instances. Could a nobler work be performed by us than to start a crusade—and not, as in the past, a silent one, against these diseases which are responsible for "race suicide," in its true sense, through the inculcation of knowledge in the minds of parents and the laity, as a body, in reference to the necessity of instruction of the young man as to the risks he runs personally, should he acquire them, and as to the risk he subjects the woman he marries should he carry them to the nuptial couch? Should we, through our moral influence along these lines,—and the only possible lines, be enabled to exterminate the gonococcus, preventive medicine would make the greatest of all strides, and yet we, the operative gynecologists, would be deprived of nearly 60 per cent. of our work! Woman, however, would be the gainer, the human race be immeasurably increased, "race suicide," as an opprobrium, would cease to be spoken of, and the unselfishness of the true medical man would again stand strongly in the foreground.

From the present standpoint, man is not the "lord of creation," but the "exterminator of the species." Kill the gonococcus by teaching man the danger to woman and to the species should she acquire it, and then man returns to the condition he is pictured as having been in before Eve tempted him with the apple and he weakly said to his Maker: "It is the woman's fault." The average Eve is ready to procreate: the average Adam is unable—chiefly because of disease acquired in ignorance of its foul sequelæ.

Would we tolerate the entrance into our homes of a man the victim of smallpox? Should we tolerate his entrance with great pox? The day is not far distant, should we do our duty along educational lines, when fathers and mothers will require a clean bill of health from Adam before he is allowed to defile Eve. In any event, Eve is entitled to know the consequences of mating with a foul Adam. When this devoutly to be hoped for day arrives, there will be in the land fewer Rachels weeping for their children, and not to be comforted, because they are not.

As I have reiterated above, according to my light, the solution of our problem lies in education. Prostitution—the social evil, is responsible to the greatest extent for the dissemination of

gonorrhea and of syphilis. In the toleration of this evil by society too much stress has been laid upon woman's part in dissemination and too little on man's. As has been customary with the latter from the beginning of the world, he points the finger of scorn at woman, he abets woman in the making of the prostitute the social outcast, and yet, were it not for the solicitations of the man, for his untrammeled licentiousness there would be few prostitutes. It is time that there should cease to be recognized a different code of morals for man and for woman. That which is wrong in woman is equally wrong in man, and in face of the diseases under consideration the man is the chief offender and the finger of scorn should be first aimed at him. The starting point in the crusade should be the inculcation of this fact into the minds of the laity, and for this we need a new and a radical system of education.

Segregation of the female prostitute, licensing, these and other measures have been tried and without avail, because, much as we segregate her, the male prostitute is in nowise restrained and exercises his prerogative of making new female prostitutes. The sexual instinct is a God-given instinct, its purpose being the perpetuation of the species. Man, largely through ignorance of the calamities following the misuse of this instinct, has converted it into one of extermination of the species. Ignorance being at the bottom of his folly, it follows that man, at the age when this instinct is established, should be educated in reference to its purpose and also in regard to the consequences if the instinct be misused. In how many families, not excepting that of the physician, is the pubescent youth instructed by his father or by his teacher in regard to sexual matters, which not alone concern him deeply but chiefly the woman—pure in every sense until he defiles her? The crusade of extermination, therefore, of these "race suicide" diseases, should begin in the family, and where more fitting place than in the family of the physician, the man who above all should be an exemplar in the matter under consideration? I take it that the average young man approaching puberty is not foul at heart. He has the making of the libertine in him, however, if he be turned loose to graze without the halter. Bridle him well through education in matters sexual, and I believe that at least one-half of the present percentage of these foul diseases will disappear. There remains the born libertine! the man who will not be educated! the type of man who glories in his conquests and boasts of the number of times he has had the clap. This man will continue to make prostitutes, this man will continue to befoul woman, and for him repression is the remedy. The laity is being educated in reference to the methods for the prevention of the dissemination of tuberculosis, educate similarly the laity in respect to these social diseases. In time there will arise in the land a loud cry calling for the suppression of the professional libertine, if need be by laying the strong hand of the law upon him. If you cannot appeal to the reason of such an animal, you can always appeal to his fear. These views may appear Utopian and I grant that to attain them calls for the shaking off of many a shackle handed down from ages. More difficult victories have been won, however, firmer bonds have been broken, and all other means having been tested and having failed after a most lamentable fashion, legislation must finally be invoked to check "race suicide" as we, the gynecologists, view it. Yet another phase, and this is the education of the young girl. We teach our daughters at the marriageable age the risk they run should they mate with the drunkard; we endow them with all the knowledge and the graces which enable them to shine in whatever social sphere they may be called upon to enter, yet, we tell them nothing about their sexual life and do not warn them against marriage with the libertine. Why should we educate the boy and not the girl? It is on her shoulders that shall lie heaviest the burden of infection. It is she who will weep for the children she lacks because of the foulness of man. It is her inherent right, therefore, to be educated in matters sexual, that she may avoid the rocks which otherwise her health and her life will strand upon. Nowadays, when the old-fashioned family doctor, the friend and the counselor of the family from birth to old age, has been eliminated, the gynecologist, in matters sexual, must take his place, and here within your grasp lies another victory to be won, another jewel to be placed in gynecology's crown. Of necessity you are brought the closest to the woman, and it is your right and your duty by dropping an advisory seed here and another there to open her eyes to facts which otherwise she may not learn. The sexual hygiene of woman extends even to the nuptial couch and we may properly tell the girl through her mother, or directly, that the man she is about to mate with should be required to submit a clean bill of health, lest all the voyage of her life be bound in shallows and in miseries. But this infringes upon the so-called professional secret, and here is another shackle to be broken. Let the laity look upon these diseases in their true light—as scourges to the race, fouler far than smallpox, than yellow fever, than diphtheria, and the laity will promptly place them in the same rank and be ready to join us in stamping them from off the earth, and the code of secrecy shall no more apply to the one than to the other.

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STERILITY DUE TO ABNORMAL CONDITIONS OF THE UTERUS.[1] [2]

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IN this brief paper it is my purpose to discuss only the more common abnormal conditions of the uterus that may give rise to sterility. I

[1] Read at a meeting of the Obstetric Section of the New York Academy of Medicine, February, 1904, as part of a Symposium on Sterility.

[2] Received for publication March 28, 1904.

shall endeavor to treat the subject from a practical standpoint, basing my statements chiefly on personal experience. To treat the subject exhaustively would require much more time than is allotted to me, and would not serve the aims of this discussion.

Sterility due to the uterus must be classified as primary and secondary. Primary sterility is that form in which the patient has never conceived. Secondary sterility is that form in which the patient has borne one or more children, but the last pregnancy and consequent delivery or other processes, has induced such changes in the uterus that the woman is unable to conceive subsequently.

PRIMARY STERILITY.

The most frequent cause of this form of sterility is the various degrees of arrest of development of the uterus. We will not enter into the various malformations that may result from an arrest of development, as good descriptions of them may be found in the various text-books on gynecology and obstetrics. What chiefly concerns us here are those degrees of arrested development that result in a uterus that is slightly below the normal size, or in a uterus in which the uterine or cervical canals are at an abnormal angle. Before we can form a good conception of this we must keep in our mind's eye the size and form of the uterus at the different ages ranging from infancy to puberty and adolescence.

I may state right here that the gynecologist finds no more difficult problem to solve than the determination in a given case whether or not the sterility be due to a uterus that is not sufficiently developed. How often does one hear that such and such a prominent gynecologist has told a patient she could never conceive as her uterus was undeveloped, and the woman shortly thereafter became pregnant and went to full term! So fully am I impressed with the pitfalls in this connection that I am always very guarded in my statements when on examination I find a uterus that is below the normal standard in size and shape. Less than a year ago a gentleman and his wife were here from Paris on a visit, and consulted me in reference to sterility. They had been married two years. The notes of my local finding were as follows: A decidedly small uterus, with an acutely anteflexed cervix, the body lies rather far back toward the sacrum and is drawn to the left side.

Diagnosis.—Arrest of development with retrodisplacement. I advised dilatation and curettage as a means to relieve the rather severe dysmenorrhea, but did not hold out much hope that it would cure the sterility. Nor did I state that the condition I found would account for the sterility. It is probable I passed a sound into the uterus, though there is no note to that effect in the record. My advice was not taken, as their stay here was of too short a duration. On their homeward trip the expected menses did not appear, and to be brief, about two months ago the woman was delivered of a girl at full term.

In the foregoing case, the passage of the sound may have removed a plug of mucus in the cervix and thus favored the conception, or what may be just as probable, is that my examination was merely incidental, and had nothing whatever to do with the conception that took place so shortly afterward.

Further, it calls for a great deal of experience in bimanual examination to be able to say definitely that the uterus is not of the size corresponding to full development. The sound is not of great assistance in these cases. I seldom employ it. Notwithstanding all this, and recognizing that errors are frequently made, one can, in the vast majority of cases, distinguish a uterus that is so far below the normal as to be the cause of sterility.

In my experience the most frequent form of arrest of development giving rise to sterility is that which results in a very small uterus, one not much more than half the size of the normal organ, with the cervix acutely anteflexed upon the body. In these cases both the cervix and the body are proportionately small. Menstruation, as a rule, sets in late, in the seventeenth or eighteenth year, is rather scanty, may or may not be attended with pain, and is usually regular until marriage, after which it becomes irregular, appearing only every two, three, or six months, and after two or more years may cease entirely. This is a singular phenomenon and is just the opposite to that which we might expect from the stimulation attendant upon sexual cohabitation.

These cases are, as a rule, hopeless. I know of no form of treatment that will benefit them, but I do know of several cases in which great harm had been done by the so-called treatment for developing the uterus.

The next most frequent variety is that which is commonly known as the "infantile uterus," with a long cervix and a very small body rather acutely anteflexed upon the cervix. Anyone who has examined a great number of these cases can readily distinguish them on account of the great disproportion between the body and the cervix. In palpating them one is reminded of an individual who is all legs and who has scarcely any trunk.

Dilatation and the insertion of a stem pessary for a week or longer are sometimes attended with cure in these cases. The prognosis is generally good if the patient is still comparatively young, let us say under twenty-five years of age.

The third variety is that which is generally described as "congenital retroversion." Both the cervix and the body are comparatively long and slender and seem to be in the same axis. The body lies retroverted to the first or second degree and considerably to the left of the median line. In these cases the arrest of development seems also to involve the ligaments, especially the broad ligaments. as well as the uterus. It is this form which baffles most surgical procedures, for remedying the existing displacement, owing to the poorly developed and short, broad ligaments.

When a ventrosuspension or a ventrofixation is attempted the operator frequently finds he is unable to draw the body of the uterus up to the abdominal parietes. Even if he succeeds in suturing the body to the abdominal wall, in a very short time it will be found in its old faulty position, so great is the traction of the shortened broad ligament upon the uterus. Great judgment is required to differentiate these cases from those of retroversion brought about by inflammatory changes of the pelvic structures.

So far as treatment in these cases is concerned, my experience is that no surgical procedure of which I am aware will cure the sterility. I do not wish to express thereby that these women are doomed to sterility. Some of them become pregnant and go to full term. But when they do, it is not on account of any surgical method that may have been carried out, for the position of the cervix is such that there is no hindrance to the entrance of the spermatozoa to the uterine canal. When conception does not take place the fault lies elsewhere than in the position of the uterus. It is usually because the development is so far below the normal that the uterus is unable to perform the function of generation.

The other common forms of malformation on the basis of arrest of development that are usually attended with sterility are (1) a peculiar formation of the vaginal portion known as "conical cervix," and (2) the occurrence of a very minute os externum, known as the "pin-hole os."

The conical cervix is very characteristic in its shape and is easily recognized. It is best detected either by digital examination or by Sims' speculum, as the bivalospeculum puts the vaginal mucosa of the vaginal vault on the stretch and alters the shape of the cervix. The cervix has a decidedly tapering appearance and frequently the anterior lip is sharp and stands out very prominently. It is in this form that the transverse ridges on the anterior aspect of the cervix are frequently observed. They were first described by Saenger, and to my mind are due to redundancy of the vaginal mucosa owing to the diminished caliber of the cervix. If the remainder of the uterus is fully developed, as it may be, the results of stretching of the cervix with the maintenance of the dilatation for a week or longer by a stem pessary or gauze packing is usually attended with good results.

Pine-Hole Os.—The os externum, to justify such a designation, must be exceedingly small, not larger than the caliber of a small surgical probe. Some of these cases give the impression of being secondary to an endocervicitis in infancy or childhood. As a rule there is an accompanying endocervicitis, but this, however, may be the effect rather than the cause of the stenosis, and may be due to imperfect drainage. If the stenosis of the os externum is the only abnormality the prognosis is generally good. A mere stretching is seldom sufficient. Some plastic surgery must be done to make a new, good-sized os. Olshausen is of the opinion that stenosis of the os internum is more frequently the cause of sterility than that of the external os. In my opinion both varieties are not infrequently met with. This much is certain, that there is less risk of an error in diagnosis in stenosis of the external os than in stenosis of the internal os.

Some authorities deny that stenosis of either os can be the cause of sterility. They maintain that if the menstrual blood can escape from the uterus, the passage must be large enough for the entrance of the spermatozoa. There seems to be some force in this argument, for it is surprising through how minute an opening the spermatozoa may enter into the genital tract and impregnate the ovum. Some years ago I excised a hypertrophied hymen from a woman who was four months pregnant. No point of entrance in the hymen could be seen until it was held up to the light, when an opening not larger than a pin point was detected in its center. The excised hymen was double the thickness of the ordinary vaginal wall. Of course, in the case of the stenosed cervix there is always some mucous discharge. The force of the flow of blood from the uterus is sufficient to drive the mucous plug before it, while, on the other hand, the mucous plug may serve as a sufficient barrier to the migration of the spermatozoa upward.

Malpositions of the uterus in the nullipara may exist from other causes than arrested development. Retroversions of the uterus without the characteristics known as congenital I have seen in young women time and again. It is not my province in this paper to discuss their pathology. Whether they are always due to inflammatory processes of the adnexa and the pelvic peritoneum, is a matter of dispute. Let their pathology be what it may, this I know, that such a malposition may be the cause of sterility, and that impregnation frequently follows if the displacement be corrected, be it either by means of a suitable pessary or by some proper surgical procedure. Impregnation may occur in these cases even without correction of the malposition, but the pregnancy is usually interrupted between the second and fourth months.

Pathological anteflexion of the uterus not of developmental origin is not an uncommon condition, and is prone to be attended with sterility. There is scarcely any other disease of the uterus in which errors of diagnosis are so frequently committed as in this one. The reason is obvious. Normally the cervix is in a position of a certain degree of anteflexion, and even specialists with vast experience will differ in a given case as to whether the existing anteflexion is within normal bounds, or comes under the head of the pathological variety. If it were possible to define in a few sentences the points of differentiation between a normal and a pathological anteflexion, the preceding sentence would be not only superfluous, but not in accordance with the truth. It is useless, therefore, for me to endeavor to state the points of differentiation.

Schultze's dictum that the pathological ante-

flexion may be recognized by its immobility is more euphonious than practical. In my own practice I am guided in my diagnosis of a pathological anteflexion by finding the body of the uterus of usual size, the cervix comparatively large and forming a very acute angle with the body. In these cases I have obtained excellent results, with the operation devised by Dr. E. C. Dudley, of Chicago. This consists in splitting the posterior lip down to the internal os and suturing the flaps so that their ends meet at the highest point of the incision. I have had ten cases, at least, in which sterility of several years' duration has been cured by this method. The secret of success with it lies in the ability to select the suitable cases. In cases of acute anteflexion with marked arrest of development, as outlined in the beginning of this paper, the operation cannot fail to be unsuccessful and to bring discredit upon the operator.

Of the other uterine conditions that may be the cause of primary sterility, endometritis of gonorrheal origin deserves more than a passing notice. Before discussing this form of endometritis, let me say that endometritis in the unmarried and the newly married may occur from other causes than gonorrheal infection. We need only to bear in mind how common it is to have affections of the mucous membrane of the genital tract as a complication in the acute infectious diseases of childhood. An endometritis so pronounced as to be a barrier to conception is readily recognized. In addition to the profuse leucorrheal discharge there is generally a large area of erosion surrounding the external os. The chronic inflammatory process may produce such changes in the appearance of the os as to mislead the inexperienced into the diagnosis of a laceration. As a rule a thorough curettage, together with a cauterization of the erosions and the maintenance of drainage for a week or longer, will effect a cure. In some cases where the growth of the new tissue is very marked it may be necessary to make in addition a circular excision of the area of erosions and suture the new os to the vaginal mucosa as in an amputation of the cervix.

We now come to the consideration of endometritis of gonorrheal origin as a cause of sterility. This form of endometritis as an etiological factor in barrenness, to my mind, has been and is given undue weight, a legacy which we still inherit from Noeggerath's famous dictum. We have only to bear in mind the frequency of blenorrhea in the new-born to be made fully aware of this exaggeration. For the gonorrhea in the genital tract of the mother, which infects the eyes of her infant, has not been acquired during pregnancy, but, as a rule, before conception has taken place.

It can be readily understood that there would be a barrier to conception during the first few weeks of the infection when there is profuse purulent discharge almost filling the entire uterine canal. But when the process has become chronic, the secretion scanty and frequently mucoid, and when, as it has been demonstrated, the gonococci are limited to small areas, the cause of the existing sterility must be sought elsewhere, and will usually be found in the changes that have been wrought in the tubes.

After due consideration and an impartial weighing of the evidence as presented by a thorough bimanual examination, it is thought that the gonorrheal processes in the cervical and corporal mucosa is the cause of the sterility; the same treatment is applicable as for endometritis in general. I would make this difference, however, that following the curettage I would apply a 20 per cent. solution of nitrate of silver freely to the whole uterine canal and would pack with iodoform gauze. It may be neecssary to repeat the nitrate of silver application several times to effect a cure. It need scarcely be added that the treatment is justifiable only when the disease has become chronic. Acute gonorreal endometritis must not be tampered with.

Fibromyomata are the only growths of the uterus as a cause of sterility that need concern us to-night. The other growths are too rare as an etiological factor to merit our discussion.

Fibroid growths of the uterus are an uncertain factor in causation, for conception may sometimes occur in a uterus that is studded with them; on the other hand, a single small growth may be so situated as to prove an impassable obstruction to the spermatozoa. A small growth situated in the cervix near the internal os may have a double action: (1) in presenting an obstruction, (2) in bringing about a retroflexion of the uterus.

Olshausen collected the statistics of 1731 cases of fibromyoma, in which 520, or 30 per cent., of the women were sterile. This percentage is generally considered as rather high. In those cases described first by von Recklinghausen as adenomyomas, sterility is the rule, as these growths occur chiefly, and, according to von Recklinghausen, only in undeveloped uteri. Some authors claim that the subserous variety is attended with a higher percentage of sterility than the other varieties. Schorler collected 253 cases, and found nine per cent. of sterility in the myomatous polypi, 18.7 per cent. in the cervical growths, 24.7 per cent. in the interstitial growths, 38.8 per cent. in the submucous variety, and 47.8 per cent. in the interstitial variety. Gusserow, on the other hand, states that most of the recorded cases of pregnancy in fibroids have occurred when the growth was subserous.

Fibromyomata may also be the cause of secondary sterility. The growths in these instances either have not developed until after the first or second pregnancy, or were so small as not to interfere either with conception or gestation. I have not had the time to look over my own cases in reference to these points. In a general way I know that though I have seen a large number of cases of fibroids of the uterus, I have seen but very few in which pregnancy was present at the time of observation. A great number of the cases were observed in women who had never been

pregnant, while there was a good percentage who had given birth to one or more children.

SECONDARY STERILITY.

The most frequent conditions of the uterus giving rise to secondary sterility are (1) chronic metritis, and (2) very deep lacerations of the cervix.

Chronic metritis.—A puerperal uterus that fails to undergo proper involution will after a time have an increase of its connective tissue, so that the organ later becomes more fibrous than muscular. A certain degree of endometritis usually attends chronic metritis; but in some cases the endometrium may be fairly healthy, in which case pregnancy may occur, only to be interrupted at any time between the fourth and twelfth week of gestation. In some cases the diseased uterus may battle with its contents for even a longer period, and the miscarriage not occur until the sixth month or later. The condition is easily diagnosed by finding a uterus double or treble the normal size, very hard in consistency and more or less sensitive to pressure. The woman, as a rule, complains of various nervous symptoms, and a prominent symptom is the sensation as if something is moving about in the abdomen. If chronic metritis is seen at an early stage, some benefit may be derived from the various therapeutic measures recommended, but in the advanced stage I know of no procedure that will afford any relief.

Laceration of the cervix.—In order that a laceration can be the cause of sterility it must be very deep, and usually extends beyond the vaginal junction. Such lacerations are generally unilateral and give the impression as if the tear had extended beyond the os internum and into the body. No doubt, many of these cases are instances of slight degrees of rupture of the uterus that have undergone a natural cure. Lesser degrees of tears, when they are bilateral and attended with marked eversion and hypertrophy of the lips, may be attended with sterility. Still it is surprising how readily conception, which may even end in a full term gestation, may occur in very severe degrees of laceration with more or less thickening of the lips. In the form of laceration first spoken of the repair needs to be done by an experienced and skilled hand in order to meet with success. In the second form with marked hypertrophy of the lips, the operation that will give the best results is a partial amputation.

Other conditions of the uterus giving rise to secondary sterility that require a passing notice are permanent hyperinvolution and atresia of the uterus, following a rough curettage during the puerperal period, or a too vigorous curettage with or without the application of a caustic to the endometrium at a non-puerperal period.

Permanent hyperinvolution of the uterus.—As I have previously pointed out on two occasions, normal involution results in so-called hyperinvolution, that is, if involution has progressed to the full physiological extent, the puerperal uterus is reduced to a size appreciably smaller than the normal parous organ. It may only be half the size of the normal uterus. As this degree of involution is favored by lactation and is rarely seen except when the woman nurses her baby, it is commonly known as lactation atrophy. It is a temporary condition coexistent, as a rule, with the period of lactation. But occasionally, indeed very rarely in my experience, from causes into which we need not now enter, the uterus remains in this condition of undersize and is unable to fulfil its functions of menstruation and gestation. We then have a pathological or permanent hyperinvolution of the uterus. The only treatment that can offer any success in these cases is that which partakes of prophylaxis. If a woman continues nursing her infant until the eighteenth month or longer, and the menses have not recurred, and on examination the uterus is found below the normal size, the child should be taken from the breast at once and the mother placed upon a tonic and building-up treatment.

Atresia of the uterus following too vigorous curettage has already been mentioned and does not call for extensive description. It may be added that amenorrhea and consequent sterility may follow such a curettage even without the production of atresia. The endometrium simply fails to regenerate, because the curette has scraped away the tissues too deeply, not leaving enough of the glandular structure to build up a new endometrium. This danger alone, apart from many others of even a more serious nature, should make the general practitioner very wary of curetting the puerperal uterus.

I am conscious that I have treated the subject at hand in only a very fragmentary manner, but if I have been able to throw out a few practical hints in the recognition and treatment of sterility due to the uterus, I shall be content.

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STERILITY FROM VAGINAL CAUSES.[1]

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A DIVISION of sterility in women into causes due to derangements of any particular parts of the system of generation we must at once recognize as arbitrary and impossible to establish, since such derangements grade insensibly from one part to another, the whole condition being sufficient to establish sterility while that existing in any one part alone might not do so.

A study of the subject in this way, however, has its advantages in that it concentrates the attention more upon details which might otherwise be lightly considered. The part which the vagina takes in the physiology of reproduction is that of the chief organ of copulation in the female. Its function is to produce an ejaculation of semen from the male and retain it in a healthy condition

[1] Received for publication March 22, 1904.

in such proximity to the cervix that it may readily find access to its canal. Therefore, we may say in a broad and general way that in so far as the vagina fails in the above-mentioned functions it tends toward producing a condition of sterility. It is surprising to observe how obstacles in the vagina pathological, artificial and congenital are overcome in the efforts of nature to reproduce the species.

Skene quotes a case where the vagina was the seat of a cyst as large as the foetal head and yet conception took place and delivery could only be accomplished by its puncture.

Hirst mentions a case of congenital atresia admitting only a small surgical probe, yet pregnancy occurred.

In the celebrated case of Louis, quoted by P. Müller and others, pregnancy took place by the rectum, the upper part of the vagina opening into it. This was the occasion for a papal bull, for this purpose issued by Pope Benedict XIV. permitting intercourse in that way. The author has seen a case of complete procidentia with consequent inversion of the vagina where impregnation occurred. Cases have been familiarly quoted where conception has occurred, though the hymen was unruptured, and of such a character that it could not possibly have admitted the male organ. Yet, notwithstanding these facts, our premise that anything which interferes with a normal condition of the canal of copulation tends toward sterility is true, and these cases are exceptions.

We will now consider more in detail the departures from the normal and for the sake of systematic study divide the subject in the following way, leaving out artificial interference: (1) Congenital causes; (2) pathological causes; (3) traumatic causes; (4) psychical causes.

1. CONGENITAL CAUSES.

Pseudo-Hermaphroditism.—This condition as a cause of sterility is of considerable importance from its comparative frequency. The author has seen two cases within the past year in which the determination of sex was most difficult. These cases have not had the attention which they deserve from the point of view of sterility. In them sterility is almost invariably the rule, and not only is the imperfection of development in the vagina but in the other organs of generation as well. These patients are usually the victims of well-meant but ill-judged interference on the part of their medical advisers.

It seems to the author that the advice in such cases, the diagnosis having been thoroughly established, should be prompt and firm. They should be informed of their unfitness for the marital relation, of the outlook for sterility and advised to seek some useful occupation and give up all thoughts of matrimony. I consider it unwise and unfair to tamper with these ill-developed organs, endeavoring, for instance, to convert the uncertain sex into a female by amputating the rudimentary penis and establishing an artificial vagina. Grant that the operation has been so far successful as to make a somewhat close approach to the female organs, is it not bitterly unfair to the other party to be joined by holy wedlock to such a being?

Congenital Absence of the Vagina.—The author has seen one such case. The patient was of a well-marked feminine type. Careful examination showed no trace of a canal, but the presence of a mass the size of a fetal head occupying the situation of the uterus. A diagnosis of retained menstrual fluid was made. Dr. Bache Emmet operated upon her at the Post-Graduate Hospital to make a vagina and release the fluid. No trace of a canal was found throughout and the mass proved to be a sarcomatous uterus with no retained menstrual fluid present.

Vaginal, Septa and Bands, Double Vagina.—These cases are common and occur as a result of the failure of development of the ducts of Müller, the two canals failing to a greater or less extent to coalesce into one. They are often accompanied by imperfectly developed uterus and tubes. They may cause imperfect sexual connection.

Congenital Atresia.—Such cases are comparatively rare, and it is not uncommon to find in them that the urethra has become dilated and that the sexual act takes place through it, thus diverting the semen into the bladder.

Unusual Passages Due to Congenital Malformations.—Cases have been authentically reported where the upper part of the vagina has opened into the rectum or bladder, an opening in the normal situation being absent.

Persistent Cloaca.—Roberts calls attention to a class of cases where the normal anus is absent and by imperfect growth downward of the perineal partition the rectum opens into the urogenital sinus, not the vagina, for the ducts of Müller have not grown downward to form its lower part.

Imperforate Hymen.—Such cases are rare, and if other organs are normal the attention will be drawn to the abnormality early in puberty by the disturbance due to retained menses.

2. PATHOLOGICAL CAUSES.

These being the most frequent, are necessarily the most important causes of sterility due to the vagina.

New Growths.—The vagina may be the seat of any kind of new growth, but only five varieties may be mentioned as occurring sufficiently often to demand consideration as related to this subject.

Carcinoma of the Cervix.—Cohnstein has investigated this subject, and while his statistics show that this condition has a decided tendency toward sterility, in a fair proportion of cases it does not prove a bar to conception. This subject will be touched upon again when considering the effect of abnormal discharges.

Sarcoma.—This may find its origin in the cervix or uterus and obstruct the vagina or may originate from the vagina, usually the anterior wall.

Vaginal Cysts.—These usually occur in the anterior wall, and may reach considerable size. They have their origin in this situation as a rule from the ducts of Gärtner.

Fibroids from the uterus or cervix occupying the vagina.

Syphilitic Growths. — These sometimes resemble malignant tumors so closely that a diagnosis may be made only by microscopical examination of a section of the tumor.

Inflammatory Conditions Resulting in Abnormal Secretions Inimical to the Life of Spermatozoa.—This we must believe is frequently the cause of sterility. The following facts in regard to the agents which effect the vitality of spermatozoa are of great importance and have been established by many experimenters. The normal semen is faintly alkaline in reaction. Vaginal secretion faintly acid and secretion from the cervix faintly alkaline. A faintly acid secretion stimulates the movements of spermatozoa. A pronounced acid at first stimulates and then causes them to permanently cease their movements. A faintly alkaline secretion favors the continued life of the cells, and a powerfully alkaline medium kills them. Thus we see that any marked departure from the normal reaction of the secretion from the cervix or vagina must tend toward sterility through destruction of the spermatozoa. They are also quickly killed by contact with water. Hence a profuse discharge of unusual reaction from endocervicitis, an irritating discharge from carcinoma of the cervix or vagina, or a vaginitis with profuse and acid discharge, must all have an important action in destroying the life or activity of spermatozoa with consequent induction of sterility. The same condition is also brought about by the presence of urine in the vagina.

3. TRAUMATIC CAUSES.

Among these causes vesicovaginal fistula is one of the most striking. We would expect sterility here from the presence of urine in the vagina, but the cessation of menstruation and ovulation in many of these patients during the existence of the fistula is a curious phenomenon. Destruction of the perineum seems to have but little influence. Also the presence of cystocele or rectocele. Complete procidentia, however, is usually accompanied by sterility, but child-bearing has been often observed under these conditions. Hirst has reported a case of traumatism, from copulation, resulting in a false opening into the rectum through which this act was continued. Such cases, however, must be extremely rare, and are only mentioned as possibilities.

Atresia of the vagina due to disease or trauma also occurs, and may be a bar to normal insemination. Injury or former disease of the vagina may set up a condition causing vaginismus which seriously interferes with cohabitation.

4. PSYCHOLOGICAL CAUSES.

Incompatibility seems to have been fairly demonstrated in a limited number of cases by good observers. Cases are quoted where, the marriage relation having been continued for a considerable length of time without progeny, each party having contracted a new alliance, has proved fertile. Under this head also may be included many cases of vaginismus where the distaste for the sexual act sets up a reflex contraction of the sphincter muscles of the vagina (the sphincter vagina and levator ani) of such violence as to prove an effectual bar to copulation.

TREATMENT.

In cases of congenital malformation of the vagina where the other organs are demonstrated to possess their normal functions our personal consideration for the subject of the deformity is such that we are justified in resorting to any reasonable surgical measure for correcting it, and in this we must realize that we are largely controlled by sentiment. In the breeding of any other animal except a human being we would be controlled by judgment and the imperfect specimens would not be used for this important purpose.

The treatment of pathological conditions must naturally have been suggested by the enumeration of the causes themselves. In the case of new growths they should be removed, but when of malignant character, conception should be guarded against. Where the growth is of syphilitic origin the use of the mixed treatment with mercurials and iodides will usually prove effective. Where the sterility is due to an excessive and acrid secretion of acid mucous, it may be relieved by the judicious use of antiseptics and local applications, among which the very best is nitrate of silver. The applications should be made in strength to meet the conditions usually varying from 20 to 40 grs. to the ounce. Several such applications may be necessary at intervals of about one week, in the meantime a cleansing and astringent douche of creolin, one dram to two quarts of water, and one teaspoonful of fluid extract of white oak bark, may be administered two or three times daily with the patient in the dorsal position. Excellent results also may be obtained with other antiseptics as potassium permanganate, bichloride of mercury, lysol, etc. Local applications of alcohol sometimes seem to have a very beneficial effect.

There are several new proprietary preparations of silver in use, none of which I believe to be as effective as the nitrate of silver of the Pharmacopœia.

The relief of sterility due to traumatic causes offers a wide field of usefulness, and to attempt a specific description would lead us into a field too broad for the scope of this paper, but operations for the relief of procidentia, cystocele, rectocele, lacerations and vesicovaginal fistula at once suggest themselves. Where sterility is really due to psychological causes the physician can offer practically no relief, the means for this lying with the individuals affected.

Finally, each case should be carefully studied

on its own merits, and the etiology thoroughly established; we should map out a definite plan and persist in this until relief is afforded.

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REFERENCES.

Duncan, James Matthews. "Fecundity, Sterility and Allied Topics."
Emmet. Principles and Practice of Gynecology.
Flint. Physiology.
Hirst. Text-book of Diseases of Women.
Muller, P. Encyclopedia of Obstetrics and Gynecology, vol. ii.
Roberts. Gynecological Pathology.
Skene. Diseases of Women.

YOHIMBIN; ITS USE IN THE TREATMENT OF EYE, EAR, NOSE AND THROAT DISEASES.[1]

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YOHIMBIN is a new alkaloid derived from the yohimbehe tree, a native of West Africa. This drug crystallizes in the form of white needles, having a silky appearance. It is readily soluble in ethyl, methyl and amyl alcohol and in ether and chloroform, but is only soluble in water to the amount of about two per cent.

The hydrochlorate is the salt usually employed and is fairly stable except in solution when it deteriorates rapidly. Solutions over a week old cannot be relied upon. It may, however, be preserved much longer by the addition of a small amount of chloroform.

Yohimbin has been much praised as an aphrodisiac, though but little has been written about it as a local anesthetic. Various observers have proved that it is non-toxic when injected in doses of 25 c.c. of a one per cent. solution of the hydrochlorate. After its injection a local anesthesia is produced which lasts for 1¾ hours.

Magnani (*Annali di Ottalmologia*, XXII, Nos. 5 and 6, 322, 1903) has reported that it causes anesthesia of the cornea and conjunctiva when dropped into the conjunctival sac. In a later article (*Clinica Moderna*, No. 35) he states that it causes considerable smarting when freshly prepared, but that this smarting subsides with the onset of the anesthesia. Tactile sensibility of the conjunctivia is obtunded in one minute after the application of the solution of the drug, and in five minutes the cornea begins to lose its sensibility, being completely anesthetized at the end of ten minutes. In about half an hour sensibility begins to return and is completely regained in about an hour. Sometimes the pupil is contracted and sometimes dilated and the movements of the iris are sluggish. The drug has no effect on accommodation.

Very shortly after the solution of yohimbin is instilled into the eye hyperemia is observed which persists for several hours. It is not so marked in old solutions. As might be expected, chloroform, when added to the solution for preservative purposes, increases the smarting but does not interfere with its action.

Because of the hyperemia which it causes, Magnani suggests its use in chronic affections of the eye which require stimulation. He compares and prefers it to tropacocaine because its effect is longer and because it is non-poisonous. Cocaine affects the epithelium and impairs the nutrition of the cornea, causes mydriasis and hypotony, and is toxic; for these reasons a satisfactory substitute is desirable.

The experiments and conclusions of Dr. Claiborne to determine the field of usefulness of yohimbin in ophthalmic practice are as follows:

Two per cent. Solution of Yohimbin.—Right eye of Dr. J. H. Claiborne. 12.22. Two drops of yohimbin in right eye; slight stinging. Astringent feeling similar to cocaine; stinging; passed in two minutes. 12.24. Two drops; stinging slightly less; eye slightly red; stiff sensation similar to that produced by cocaine; no difference in size of pupil. 12.27. Distinct insensibility of cornea and conjunctiva; two more drops; stinging less than ever; no increase in palpebral fissure. 12.32. Insensibility slightly wearing off; eye quite red; slight fear of light. 12.37. Anesthesia very faint; eye red, uncomfortable; stiff feeling wearing off; no difference in pupil. 12.45. Anesthesia gone; redness still persists. 1.15. Redness still; eye comfortable.

From the above experiment, it will be seen that two drops of a two per cent. solution of yohimbin-spiegel introduced into the conjunctival sac of a normal eye, twice, at intervals of two minutes, will, in five minutes from the initial instillation, produce a corneal and conjunctival anesthesia which lasts about five minutes. It also produces redness, lacrimation and causes the stinging sensation and the stiff feeling characteristic of cocaine. No widening of the palpebral fissure was observable.

Two per cent. Solution of Yohimbin.—Right eye of James Buckley. 11.15. Three drops into right eye; redness, stinging, flow of tears. 11.17. Three drops; stinging less. 11.19. Scarcely any stinging. 11.21. Three drops, no stinging, tactile sensation, conjunctiva; perfect anesthesia of cornea. 11.23. Three drops, no stinging. 11.25. Three drops into conjunctiva; tactile sensation; cornea as before. 11.30. Cornea as above, apparently absolute anesthesia of conjunctiva. 11.40. Same as before. 11.45. Cornea as before; conjunctiva slightly sensitive, pupil slightly dilated, vision slightly blurred for far and near; tension normal. 11.50. Conjunctiva as before; cornea as before. 12 M. Cornea and conjunctiva as before; pupil normal; vision normal. 12.10. Sensation of cornea slight; conjunctiva distinctly sensitive, eye quite red. 12.30. Very faint sensibility of cornea. 1 P.M. Normal sensibility, slight redness.

From the above it will be seen that six instillations in ten minutes of a two per cent. solu-

[1] Received for publicaton February 2, 1904.

tion of yohimbin will produce an anesthesia of the cornea which persists as complete anesthesia for thirty-five minutes after the last instillations, and disappears completely only at the end of an hour and a half. The conjunctiva obviously becomes sensitive a short time before the cornea. The first instillation was made at 11.15, and the sixth and last one at 11.25. At 11.45, half an hour after the first instillation, there was a moderate dilation of the pupil and slight blurring of the vision for far and near. At the end of fifteen minutes, the pupil was normal. It was again observed that the cornea remained sensitive longer than the conjunctiva.

The idea of combining yohimbin and adrenalin chloride, to study the effect, presented itself. Accordingly equal parts of yohimbin in two per cent. solution and adrenalin chloride solution were mixed in a clean dish and the following experiment was made:

Mixture of Adrenalin and Yohimbin.—Left eye of James Buckley: 11.41. Three drops of above solution in left eye. Stinging about same as yohimbin alone. 11.43. Three drops; less stinging. 11.45. Three drops, scarcely any stinging; redness about the same as yohimbin alone. 11.46. Cornea insensible; conjunctiva slightly so. 11.47. Three drops. 11.49. Three drops. 11.51. Cornea absolutely insensible; slight sensation to touch on conjunctiva. 11.53. Three drops; no change in pupil. 11.55. Three drops. 12.01 (twenty minutes). Anesthesia of cornea complete; conjunctiva has slight tactile sensation. 12.03. Pupil commencing to dilate particularly for distance, less for near. 12.06. Corneal anesthesia, conjunctiva, tactile sensation, pupil still dilated, accommodation apparently unaffected, temperature normal. 12.11. Corneal anesthesia, conjunctiva, tactile sensation, pupil same, no apparent effect on the accommodation; eye as red as yohimbin alone. 12.16. Faint blurring of sight for distance and near; pupil quite large for distance, but reacts considerably for light and reading. 12.21. Corneal anesthesia complete; conjunctiva slightly painful, very red and suffused, but no worse than with yohimbin used alone. 12.26. Corneal anesthesia complete; conjunctiva slightly sensitive, pupil normal, accommodation normal. Tension normal. 12.31. Same condition. 12.36. Same. 12.41. Same. 12.46. Cornea slightly sensitive. 1.05. Sensation of cornea not yet perfect, considerable difference between two eyes. 1.22. Both corneas same. 2.15. Congestion gone.

Observe that six instillations were made in fifteen minutes. The complete corneal anesthesia persisted from 11.55 to 12.41, or about forty-five minutes; again, the conjunctiva regained its sensitiveness sooner than the cornea. The pupil commenced to dilate at 12.03, about five minutes after he last instillation, and persisted till about 12.26, having lasted about twenty minutes. There appeared to be a faint blurring both for far and near during the entire time. The redness caused by the instillations was quite as marked as by yohimbin alone, and at no time was there the faintest sign that the characteristic effect of adrenalin on the conjunctiva and eye-ball was present. The anesthesia of the cornea was profound, and the anesthesia of the conjunctiva while present was never so marked or startling as that of the cornea.

The writer has not used either yohimbin alone or in combination with adrenalin in any operation on the eye requiring local anesthesia.

The following conclusions are justified from the above study:

1. A two per cent. solution of yohimbinspiegel, either alone, or in equal mixture with adrenalin chloride solution, dropped into the conjunctiva cul-de-sac from five to six times in ten or fifteen minutes, will produce both corneal and conjunctival anesthesia. Marked anesthesia of the cornea lasts from thirty to forty-five minutes after the last instillation; the conjunctival anesthesia is at no time so profound as the corneal, and disappears several minutes before the latter.

2. There is a slight stinging sensation immediately following the instillation which becomes less and less with each instillation, finally disappearing altogether.

3. The eye becomes immediately suffused and continues red for more than an hour after the last instillation.

4. There is no widening of the palpebral fissure.

5. There is a moderate but marked dilatation of the pupil which comes on several minutes earlier after the last instillation with adrenalin and yohimbin in combination than with yohimbin alone, but lasts in either case from fifteen to twenty minutes.

6. The slight blurring of the vision for far and near appears to be due to spherical aberration rather than to paresis of accommodation.

7. Yohimbin alone or in combination with adrenalin, is an exceedingly mild mydriatic.

8. Adrenalin when mixed in equal parts with yohimbin in two per cent. solution, loses its constricting power upon the blood vessels of the palpebral and bulbar conjunctiva.

9. This last-mentioned fact suggests the idea that yohimbin may be an antidote to adrenalin chloride.

10. In view of the congestion caused by yohimbin, it cannot be considered the ideal anesthetic for operations involving the conjunctiva or muscles.

11. As an anesthetic in cataract extractions and in iridectomy, it would probably be effective.

12. On account of the congestion produced by it, yohimbin would be inferior to cocaine as an anesthetic in all operations upon the eye.

Ear, Nose and Throat.—Haike (*Therapie der Gegenwart,* May, 1903) made use of yohimbin solution and found it useful in ear and nose work for the removal of the nasal turbinals and granulations, and of polypi from the ear, because of its freedom from toxicity and because it did not cause the tissues to contract (as cocaine does) and so render it difficult to remove them.

Before making use of yohimbin in operative work it seemed advisable to ascertain some of the peculiarities of the alkaloid, so some preliminary experimental work was done by Dr. Coburn as follows:

In general it may be said that a two per cent. solution of yohimbin appreciably benumbs the mucous membranes in two minutes, in five minutes they are markedly anesthetic and in ten minutes the maximum degree of anesthesia with this drug is obtained. Anesthesia lasts from one-half to three-quarters of an hour and then sensation, gradually returns, being completely restored in one hour and a half. As yohimbin does not act on cutaneous surfaces except by injection (directly affecting only mucous surfaces) it could only be applied in such cases where there was perforation or destruction of the membrana tympani or where there were granulations or polypi.

In the nose its application to the turbinals seemed at first to produce a temporary swelling with considerable hyperemia, after which there was some contraction of the tissues, though the redness persisted to the end of the experiments.

Applied to the tonsils, uvula, and pillars of the fauces there was little change noted except perhaps a slight flushing.

Salivation was quite marked at first followed by a sensation of dryness. There was no puckering or constricted feeling such as occurs after the use of cocaine in the mouth. The solution is only slightly bitter.

Mixed with equal parts of adrenalin chloride, one to 1,000, and applied to the turbinals, there was considerable contraction of the tissues, not so marked as with adrenalin alone but much more so than with the yohimbin solution alone. The characteristic blanching of the tissues peculiar to adrenalin was wanting, as was also (with the mixed solutions) the peculiar redness caused by the application of yohimbin alone.

Compared with cocaine, the pallor, anesthesia and contraction of the tissues were not nearly so pronounced.

For the examination of the nose, the determination of spurs and differentiation of hypertrophies from simple swellings it was not as effective as cocaine because the contraction caused by it was not so marked.

To anesthetize the nares for the introduction of the eustachian catheter it was sufficiently effective, but where hypertrophied turbinals were obstructive, cocaine was preferable. Nasal spurs and hypertrophied turbinals were removed during the anesthesia produced by it, but sensation was not so thoroughly obtunded as with cocaine while the immediate hemorrhage seemed unusually severe and lasted for some time. On this account some of the patients were rather frightened at the loss of blood.

Hemorrhage was not sufficiently severe to require plugging.

Secondary hemorrhage did not occur.

Cauterization of the tonsils to which yohimbin solution had been applied was rather painful.

Amputation of the uvula caused some pain and the oozing of blood was considerable for some time. A peritonsillar abcess was incised under cocaine anesthesia with considerable pain; a second opening on the following day was necessary and this was performed under yohimbin anesthesia with much less pain than the first time.

It is a well-known fact that cocaine does not readily or thoroughly anesthetize inflamed tissues, and it may be that yohimbin has not this peculiarity, but acts well on both normal and inflamed surfaces. This is a point requiring further testing.

REMARKS.

Before yohimbin is extensively used its effect on germ life should be determined; whether like cocaine fungi and germs can grow in its solution or whether like holocaine it is slightly antiseptic.

The question of sterilizing the solutions also arises because of its rapid deterioration in solution; boiling will probably hasten the process.

Because of the hyperemia which yohimbin causes its use in persons with hemorrhagic tendencies may be dangerous. Whether it produces hyperemia in distant organs or mucous membranes when injected also requires determination.

Cocaine occasionally causes sexual excitement; whether in view of its aphrodisiac power yohimbin will do this in the quantity and strength used, especially when employed in the mouth and throat, requires extended observation.

ADVANTAGES.

Non-toxic.
Long duration of anesthesia.
Does not markedly contract the tissues.
Taste only slightly bitter.
Does not cause unpleasant contraction of throat and mouth.

DISADVANTAGES.

Does not keep well.
Does not contract the tissues.
Hyperemia and hemorrhage after operation.
Salivation.

PROGNOSIS AND TREATMENT OF URETHRAL STRICTURE.[1]

BY EDWARD L. KEYES, JR., M.D., PH.D.,
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SURGERY differentiates itself from medicine by the act of man. Whereas the physician must usually wait upon nature and assist the patient to recovery by forestalling complications and strengthening him to overcome an inevitable foe, it is the privilege of the surgeon to open hostilities.

Such being the case, it is essential in debating the prognosis of a surgical disorder—and urethral stricture is essentially a surgical disorder—to deal intimately with its treatment. The two are inseparable. Proper treatment of stricture implies, in general, a good prognosis; improper treatment, a bad prognosis. Indeed, we may go

[1] Received for publication March 22, 1904.

even farther and state, with ample justification, that proper treatment of the causes of stricture will prevent its occurrence.

The causes of stricture are two: Gonorrhea and trauma. Let us begin by considering the prognosis as to stricture in these conditions.

The opinion prevails that stricture is usually caused by chronic gonorrhea. No doubt this opinion is founded on the fact that chronic gleet usually precedes and accompanies other symptoms of stricture. But closer observation reveals the fact that many cases of chronic gleet go on for years without producing stricture; while, in the other cases, the gleet is itself the first symptom of a gradually contracting stricture. After all, stricture is nothing more than a scar; and gonorrheal stricture is usually a dense and deep-seated scar founded, the pathologists tell us, on inflammation about the glands and follicles of the urethra. It is obvious that the intensity of this perifolliculitis depends on the intensity of the urethral inflammation against which it reacts. In other words, it is the acute stage of gonorrhea, with its blood, ardor and chordee, that lays the foundation for future stricture; and to prevent stricture we must modify the acute stage of the specific cause. This is one of the important advantages of the so-called abortive treatment of gonorrhea. I have employed this treatment for more than three years and have never known stricture to follow its use.

Traumatic stricture is attributable to two causes: Urethral instrumentation and perineal injury. Happily, the day of urethral brutality is almost past. The practice of "burning out a clap" with copious and concentrated silver nitrate, and of tearing the canal with metal instruments of all sizes and shapes, is no longer the ornament of modern surgery.

The sensitiveness of the urethra is respected more than it used to be; but be as gentle as we may, there is one condition in which the use of an instrument sometimes causes stricture. I refer to the constant passage of a catheter required by many cases of prostatic hypertrophy. Some of these patients acquire stricture in spite of every precaution; but, fortunately, this stricture is superficial and soft, readily yielding to dilatation.

Quite the opposite is traumatic stricture due to perineal injury. The patient falls astraddle the edge of a plank or some sharp object. Hemorrhage from the urethra, difficult urination, even complete retention, disclose the urethral injury, and stricture follows swift and sure—stricture of the most resilient, intractable type. Indeed, so dense is the scar that follows an almost trivial injury of this kind, that the only safe practice is to perform external urethrotomy in every case, be the symptoms of urethral rupture ever so mild, and to minimize or prevent dense scar formation by incising the contused canal and draining with a large perineal tube. Stricture will doubtless ensue, but it will be relatively benign and dilatable.

So much for prognosis before the fact. When stricture is actually present the immediate prognosis depends entirely upon its dilatability. If the passage about twice a week of conical sounds or bougies causes a gradual widening of the caliber of the urethra, so that at each session larger instruments will pass without the use of too much force, the prognosis is excellent; the patient appreciates the prompt subsidence of symptoms, and the surgeon recognizes the gradual absorption of the scar. But the stricture may be undilatable for one of four reasons: it may be resilient, irritable, impassable or complicated.

Resilient or unyielding strictures are those which do not yield to dilatation, which after each passage of a sound, recontract to their former tightness. Such strictures are common in the penile portion of the urethra. In this region we frequently meet a stricture that yields to dilatation up to a certain point, but beyond this is persistently resilient. This fact once established, internal urethrotomy is demanded. The urethra should be cut widely upon the roof; then the occasional passage of a sound will maintain the caliber of the canal.

In the deeper urethra resilient strictures are usually, perhaps, always, traumatic. Gonorrheal strictures of the bulbous portion of the canal—be they ever so dense—are doubtless always dilatable, unless the tissues have been damaged by brutal surgery or by periurethritis and urinary infiltration. Not so traumatic strictures: these involve the membranous urethra, and are often so dense and resilient that nothing short of perineal section and excision of all the scar tissue will effect a cure. In order to be radical such an operation may require the removal of an inch or more of the canal and the application of a skin graft to fill the gap; yet it is always wise to resort to operation at once rather than to temporize with resilient deep stricture, vainly hoping that it may become dilatable.

Irritable stricture does not resist dilatation, but resents it. Every passage of a sound, in extreme cases every kind of urethral application whatsoever, arouses acute inflammatory reaction in the form of urethral chill, acute prostatitis or swelled testicle. In face of such an explosion local treatment must stop, and when similar outbursts follow every attempt at dilatation, it is impossible to make headway. In order to overcome this difficulty two courses are open, the one, mild, slow and uncertain, the other radical, but relatively dangerous. If circumstances permit, the palliative course is to be elected. Local treatment is stopped and internal treatment pushed. Antiseptics, such as urotropin, salol and methylene blue; sedatives, such as liquor potassæ, tincture of hyoscyamus, codeine and the bromides; balsamics, such as sandalwood and wintergreen oil, with hot sitzbaths and, if necessary, suspension, guaiacol and poultices to the testicle, constitute the treatment: for the stricture irritability is not a quality of the stricture itself, but a manifestation of smouldering prostatitis, vesiculitis or

pyelonephritis, which inflammations must be controlled by the above-mentioned remedies before local treatment of the stricture can profitably proceed.

But such a course may fail to effect its object, or the retention or sepsis due to the stricture may be so grave as to threaten life. No alternative is then possible; external urethrotomy must be promptly done. The risk of operation under such circumstances is not small, especially since the emergency often arises in cases that are worn out by suffering and sepsis, fatty in heart, sclerotic in kidneys, utterly unfit for surgical shock. Whatever delay is permissible should be made use of to improve the patient's condition by milk diet, saline enemas and urotropin to the limit of tolerance, and the operation itself must be rapid perineal section with drainage by a large perineal tube. When relapsing epididymitis can be relieved by no other treatment, the vas deferens may be cut and tied. This prevents relapse, renders the testicle sterile, but affects neither the appearance of the gland, nor the potency of its possessor.

Impassable stricture, the third variety of undilatable stricture, is of purely negative interest. If actually impassable perineal section without a guide is our sole resort; but it is a great delight—albeit a tedious performance—to pit one's dexterity against the tightness, or rather the tortuosity, of such a stricture. Tight it certainly is; yet the reason why a filiform bougie sometimes fails to enter a channel from which urine will flow in measurable stream, is because the tortuous passage transmits fluid, but will not unbend to permit the entrance of a stiff instrument. Now the potent agencies to render a stricture impassable are congestion and spasm—this is exemplified by the occurrence of retention of urine from such causes as exposure to cold and overdrinking—hence the first effort to enter such a stricture must be, not a brutal and irritating prodding with bougies, but a systematic reduction of congestion and spasm. If the occasion permits, let the patient have a hot hip bath, an injection of morphine, even a course of balsamics and sedatives. Then begin operations by distending the anterior urethra with a solution of cocaine, 5 per cent., and adrenalin 1:5,000. Hold this in the canal five minutes, then inject sterilized olive oil; then to instruments. Filiform whalebone bougies, bent obliquely or bayonet-wise, are passed *secundum artem* very gently, until one engages and enters the bladder. The others are then withdrawn, and a small tunneled catheter passed if possible. Considerable force may be employed in this maneuver; for the instrument being guided can not make a false passage, and the benefit from ironing out the tortuous passage more than counterbalances the damage from well measured pressure.

Whether the tunneled instrument passes or not, it is safer to tie the filiform into the urethra for twenty-four or forty-eight hours, at the end of which time tunneled instruments up to 10 or 12 French may probably be passed and progressive dilatation instituted.

One other agent may be useful to overcome urethral spasm, viz., electricity. I have not known electricity to cure stricture or to cause the absorption of scar tissue; but, last year, one of the members of your society, Dr. Hickling, called my attention to the fact, which I have since seen demonstrated by Dr. Chetwood, that very mild electrical currents—five or ten milliampères—will sometimes (not always) relax very tight strictures that fail to respond to any other form of treatment. Such are the methods of avoiding operation in certain cases of tight stricture; methods brilliantly successful in certain instances, but neither practicable nor profitable in others.

The complications of stricture, such as stone, infiltration of urine, periurethral abscess, etc., modify the prognosis of the disease as well as its treatment; but let us pass these by and turn our attention to the more interesting subject of the remote prognosis of stricture. Suppose the patient refuses our treatment, what are his prospects? Or suppose we have successfully dilated or cut the stricture, will it remain well, or will it recur? Such are the questions one must be prepared to answer.

The location of the stricture makes all the difference. If it lies at or in front of the penoscrotal angle, the chances are that it will contract very slowly and will never become sufficiently tight to cause retention. Such a stricture is likely to be resilient and difficult to cure without urethrotomy; yet if once fully dilated, or cut and kept open by sounds for three or four months, a permanent cure may be confidently expected.

But strictures that lie deeper than the penoscrotal angle, strictures of the bulbous urethra and of the bulbomembranous junction, promise a far graver history. If neglected they cause retention with all its horrors, chronic hypertrophic cystitis, dilatation of the kidneys and ureters from back pressure of the urine, pyelonephritis, abscess of the kidney, of the prostate, peri-urethritis, infiltration of urine, epididymitis, and death by urinary septicemia (a combination of sepsis and uremia).

Such strictures if taken in time and dilated by sounds often resolve with marvelous rapidity, in marked contrast to the stubbornness of anterior strictures; but after dilatation the contrast is even greater; for no matter how smoothly the canal is ironed out, no matter how thorough the apparent cure of a stricture in the deeper portions of the urethra, it will almost inevitably relapse. Sooner or later gleet reappears, then dysuria, then retention. The interval of perfect health may be months; it is more likely to be years; but all the while stealthily and unsuspected recontraction progresses until five, ten, twenty years after the passage of the last sound, once again there is retention and the cycle is complete.

In estimating the quality of this utterly bad prognosis for stricture of the bulbous and the membranous urethra, three factors deserve con-

sideration, viz., the nature of the stricture, the thoroughness of dilatation and the duration of treatment.

The nature of the stricture, its density, its extent, its degree of contraction, its gonorrheal or traumatic origin:—all these factors bear upon the ultimate prognosis. The old, dense, tortuous stricture, involving inches of the urethral wall and admitting only a fine bougie, may be expected to recontract after treatment more rapidly and more viciously than a stricture of softer tissue, of larger caliber or of less extent. The difference is measurable in years. For example, traumatic stricture often contracts so tightly as to cause retention within a few months of the injury. Such a stricture fully dilated recontracts with equal speed and a few months more suffice to bring on renewed retention. Gonorrheal stricture moves more slowly. Indeed, the patient with gonorrheal stricture may go on for months, even for years, suffering repeated retentions, relieving these by hot sitzbaths or by an occasional poke with a very fine catheter, and successfully avoiding for an indefinite period any real relief by dilatation or operation. Such a plan of action is, of course, successful chiefly in deluding the patient. It only delays the surgeon—for it can not check the gradual progress of ascending renal infection—and it leads ultimately to perineal section under most unfavorable circumstances, or to death by urinary septicemia; perhaps to both. The struggle may be continued for five or ten years, though it may be shorter. Exceptionally, the very first retention causes infiltration and so requires immediate section.

The interval of relief that follows the dilatation of a stricture depends in part—as we have just seen—upon the nature of the stricture. If treated similarly, traumatic strictures recontract much more rapidly than less fibrous ones. But the element of sufficient dilatation enters very largely into the prognosis. If the stricture is sufficiently dilated, it will not recontract for months or years; if it is not sufficiently dilated, recontraction begins promptly.

What then is sufficient dilatation? This implies two things: (1) That the stricture shall be dilated so widely that it no longer grasps a full-sized sound. This, for an adult, varies from 27 to 32 French; (2) that it shall remain thus dilated for three months. In other words, after the stricture has been dilated to full size by the introduction of sounds at intervals of from three to ten days, the patient is dismissed for a month.

If the full-sized sound then passes readily, the interval is made two months, then three months; then, if all is well, the patient may be assured that his stricture is quite dilated. But he may be equally assured that, no matter how free from symptoms he is during this time, his stricture will surely recontract unless he passes a sound once in six months or once a year for an indefinite period. This course of after-treatment is the only possible assurance of safety. It may be that, after many years of such treatment, the tendency to recontraction will be finally and permanently conquered; but we lack certain assurance of this, and, therefore, are not justified in promising the patient that he will ever be free from the necessity of celebrating New Year's and the Fourth of July in thus calling up old memories.

Such, generally, speaking, is the prognosis of urethral stricture, often grave, always dependent upon proper surgical treatment.

THE SUBMERGED TONSIL.[1]

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THE battle has waged long and furiously over the question of the enlarged tonsil and its proper treatment, until, at the end of many years, it can be confidently asserted that we all recognize the evils, present and future, of such growths and the necessity of some form of treatment.

No longer is heard, at least not openly, the assertion so common a quarter of a century ago—that they should be left alone as of no consequence and in time are outgrown by the child.

The writer has no intention of opening these old controversial sores anew, for he believes that they have been definitely healed. It is to a condition closely allied—both etiologically and pathologically—but which is far more liable to be overlooked that he desires to call your attention for a few minutes, *i.e., the submerged tonsil.* What do we mean by it? What symptoms does it or may it give rise to, and finally, what are the most appropriate methods of treatment, if any, to be employed in its correction?

The submerged tonsil is a term used by various writers to describe that form of faucial tonsil enlargement which is in whole or greater part hidden by occluding anterior pillars so that at first sight no excess of growth may be recognized.

The usual enlarged tonsil protruding in the median line is, according to most authorities, a *hypertrophy* or an *hyperplasia.* The hypertrophic form is non-inflammatory in origin and is made up in great part of an increase in the lymphatic element—the fibrous tissue not being conspicuous. The hyperplastic form, on the contrary, is the result of one or many previous tonsillar inflammations, and while there is an increase in all the histological elements, the fibrous reticulum is especially involved. It is this inflammatory hyperplastic form which is found in the submerged tonsil. There has occurred here, or will take place in time, a secondary sclerosis or atrophy. Indeed, the term should not be confined to the moderately enlarged tonsil hidden by the anterior pillar. The atrophy is often so pronounced as to reduce the size of the tonsil—well below normal—and yet give rise to a not insignificant group of symptoms.

[1] Read at the Annual Meeting of the Medical Society, State of New York, held in Albany, January 27, 1904.

Symptoms.—It is important to recognize their significance, for, unless attention is directed to them, they are liable to be overlooked.

Peritonsillar Abscess.—Of prime importance, is a tendency to repeated attacks of peritonsillar abscess. This is easily understood when the nature of these flat tonsils is once recognized. They show marked adhesive bands, closely connecting them with one or both pillars. Often the anterior pillar and the tonsil are so joined as to be virtually one. The tonsil itself contains deep crypts often filled with cheesy, decomposing material. What better soil could be desired for the breeding of germs! These work their way inward and proceed to grow in what is in effect a closed cavity, until in time the purulent product of inflammation forces its way to the surface.

Dr. F. C. Cobb, of Boston, in a recent paper before the American Laryngological, Rhinological and Otological Society, has gone extensively into the situation of these abscesses. As you may recall, the tonsil rests on the aponeurosis of the superior constrictor muscle. It is, however, surrounded by considerable loose areolar tissue. In the course of its development a three-cornered membrane from the anterior pillar appears extending from the velum down toward the tongue where the apex is attached—and backward to the posterior pillar. This encloses a space, at the third or fourth month of fetal life, which is later filled with lymphoid tissue—the tonsil. This membrane is the so-called plica triangularis of His. In the adult it is frequently found reflected over the tonsil. In such cases it is often possible to discover a small fossa above the tonsil formed by the plica—fossa supratonsillaris, which sometimes has the depth of 1½ C. This cavity has the disadvantage of possessing a very small mouth which is easily occluded by adhesive bands. It then becomes, in the event of the entrance of pernicious bacteria, a possible source of peritonsillar suppuration. This situation is, however, rare as compared with the areolar tissue, at the base of the tonsil. This, on account of its looseness and intimate connection with the tonsil, is most easily affected. It is also apparent how at the onset of pus formation, the tonsil will be pushed inward. The presence of the bands of adhesion will tend to prevent natural drainage and indeed to retain all unhealthy secretions. While it scarcely falls within the scope of this paper, the method of incision as advised by Cobb is worthy of mention. He argues, very sensibly, it appears to me, that the failure to locate the pus (as is so often the case in the classical incision made between the uvula and the wisdom tooth), is due to the fact that the depth of the tonsil is not taken into account and so is in reality punctured in place of the abscess.

The abscess is at the outer side of the tonsil and is separated only by a wall of mucous membrane. A probe or narrow bistoury accordingly, carried parallel to the axis of the tonsil and between it and the anterior or posterior pillar, as the case may be, on account of the anterior or posterior bulging, will enter the base of the abscess without difficulty and without risk of wounding any important blood vessels.

Of still more common occurrence are attacks of tonsillar inflammation non-suppurative in character. Indeed such tonsils are most liable to attacks of this nature. Aside from this tendency to quinsy and tonsillitis certain other symptoms are more or less constantly found in connection with the submerged tonsil.

Pain, the location of which is sometimes not definite, but described as in the throat, will often be an annoying and persistent symptom coming on in the form of sore throat. The patient is fond of describing himself as the victim of a "delicate throat." Examination may reveal a well-developed follicular condition on the posterior wall of the pharynx, which will engage your attention without avail as regards success in relieving the symptoms. Often, too, a constant collection of mucus in the larynx is complained of, with difficulty in using the voice, to the extent of even hoarseness or altered quality of tone for speaking or singing.

The Ear.—Occasionally, in the case of extensive adhesions, certain ear symptoms will be present, most common is earache. This is seen by us all in almost every severe case of tonsillitis, showing how close is the connection. The significance of the flat tonsil in catarrhal otitis is less clear. Formerly the writer was wont to disregard it. To-day, we believe it is a causal factor of no little value. If it is borne in mind that the attachment of the muscles known as the anterior and posterior pillars are in close relation to the pharyngeal mouth of the Eustachian tube, it will readily be seen how, in the case of great adhesion of these pillars to the tonsil, all normal movement is restricted or lost. Further, the pressure of the tonsil with its adhesive bands, o the adjacent blood vessels running to the nasopharynx and Eustachian tube must of necessity interfere with the proper blood supply of those parts. This alteration of function can scarcely fail to result in a chronic inflammation which is bound to extend itself sooner or later into the nasopharynx and thence to the Eustachian tube. Certainly, whatever is the true explanation, it is in our judgment a wise step to remove, not merely adenoid growth in the nasopharynx, but also to separate and remove a like condition in the fauces.

Cough.—Cough is at times a most annoying symptom. It is without expectoration, has possibly existed for months and defies all internal medication. There is often an associated dyspepsia, with coated tongue and inactive bowels, or in place of these more special symptoms, there may be only the complaint of a full and disagreeable sensation in the throat. Finally, before leaving this question of symptomatology, we would like to refer to the significance of the condition in children. In recent months, the proposition has forced itself more and more upon the writer that the average tonsillotomy is an incomplete opera-

tion. As physicians, we have been in the habit of removing any excess of tissue which is present and then desisting. The case passes out of our sight, but in after years returns or presents himself to some other physician, complaining of quinsy or some of the other symptoms just enumerated. Or, possibly, he develops a diphtheria. As a result, the lay or professional mind is led to the conclusion that the tonsillotomy was without value. What now is the true explanation? It is that the operator has removed only a part of the disease. He has left an abundant soil for further infection in the portion of the tonsil remaining hidden by the pillar. It is now the invariable rule of the writer to strive to remove the tonsil as thoroughly as possible, and, before all, to secure a separation of all adhesions.

Treatment.—Whatever may have been the sentiment of the profession a few years ago toward a laissez faire policy in the treatment of the enlarged tonsil, to-day we may confidently assert that such a course is never heard to be advocated in public. All laryngologists, at all events, are agreed as to the necessity of treatment of an active nature. Whatever is said in favor of such a course of treatment to ordinary tonsillar enlargements, applies with double weight to the submerged tonsil. The treatment is essentially surgical; all medication is of no avail. The surgical procedures are (1) a freeing of the adherent anterior pillar, and, if necessary, the posterior pillars; (2) the removal of the tonsil in whole or in part.

(1) The freeing or separation of the adherent pillar is an indispensable step in the operation. Without such preliminary release, any proper attack of the tonsil itself is impossible. In addition, wounding of the pillars is almost certain to give rise to troublesome hemorrhage and great subsequent pain. It will often be necessary, however, to cut loose the plica triangularis in order to free the gland.

Properly performed, the entire operation is scarcely at all painful. Our method is, after cleansing the tonsil and throat with a solution of Dobell, to paint both tonsils with a ten per cent. solution of cocaine. Usually, we operate on only one tonsil at a time, but occasionally we can complete the double operation in one sitting. The painting with cocaine, repeated several times for three minutes, is followed by the injection of 10 to 15 m. of one-half to one per cent. solution into the tonsil. On account of the numerous lacunæ a large part of the solution runs out. We have never seen any bad effects following its use. The employment of stronger solutions as four per cent., reported by one writer, is in my judgment dangerous and to be condemned.

The field prepared, the first and important step in the operation is now to be performed. For this purpose, Pynchon advises, as indeed he does for the entire operation, the use of cautery knives. With these I have had no experience, and so cannot speak with authority. For several years I have employed for slight adhesions the dull hook or separator of Pond, or for more extensive agglutination, the sickle-shaped knives of Leland. Care must be exercised in doing this, or in the case of an atrophied pillar the knife may buttonhole instead of cutting down. At times the released pillar can be drawn back with a fine tenaculum and the exposed tonsil removed en masse with a tonsillitome. Some surgeons find the snare, either cold or electrically heated, very applicable, and even the Volsella forceps and bistoury will at times be found suitable. With all these measures I have had little experience. Occasionally excellent results will be accomplished without any removal of tissue by merely opening up and thoroughly curetting the various diseased crypts. For this, ingeniously designed angular knives have been devised. My own preference is, however, for as complete a removal of the diseased tonsil as possible, and for this purpose I know no instrument equal to the tonsil punch. Various models have been suggested, but those of Myles seem best suited, especially the new right and left angular variety. The chief concern is to avoid cutting the tonsil pillar, the risk of doing which is greatly reduced with the new instrument. With the punch the danger of hemorrhage is avoided. The work can be done rapidly, five to ten minutes sufficing for the actual cutting. The subsequent reaction and soreness is surprisingly slight. The patient is sent home, with orders to remain indoors and gargle frequently with a hot saline solution. For the pain and discomfort I have found orthoform, in the form of an emulsion, or five-grain tablet works admirably. The other tonsil can be removed the following week.

117 East Portieth Street.

PSEUDOBULBAR (GLOSSO-PHARYNGO-LABIAL) PARALYSES.[1]

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IN 1872 Joffroy showed that the symptoms of bulbar paralysis could be present with anatomical changes demonstrable only in the cerebrum. In the same year Jolly reported a case with symptoms of bulbar paralysis and multiple sclerosis. On autopsy, foci of scleroses were found in the lenticular nucleus, but none were present in the pons and medulla.

Two additional cases were reported in 1877 by Lépine and von Barlow. Lépine first gave the name pseudo glosso-pharyngo-labial paralysis to this condition. After this in quick succession cases were published by Eisenlohr, Féré, Berger, Ross, Quincke and Oppenheim and Siemerling. The latter authors published five additional cases in 1886 and reviewed the literature. Since then cases have been described with various unusual phenomena by Goldscheider, Gaavielle, Barchard, Senator, von Leyden, Otto, Colman, Ritaman, Magnus, Kirchhoff, Bamberger, Wollenberg, König, Brauer, Ganghofner, Hartman,

[1] Presented before the Maryland Medical and Chirurgical Faculty, February 19, 1904.

Polenero, Perwuschin, Variot and Roy, Perritz, Bernhardt and Perrero. I have been unable to find any case reported from America.

The symptom complex of pseudobulbar paralysis is founded upon various disease processes. Slowly developing degenerations of the motor nerve nuclei in the floor of the fourth ventricle account for true or Duchenne's bulbar palsy. Atrophy of the anterior horn cells and sclerosis of the pyramidal tracts are the pathological findings which manifest themselves in an amyotrophic lateral sclerosis with progressive muscular atrophy.

A polioencephalitis with degenerations in the cortical nuclei may develop rapidly and even then go on to repair. It would therefore make the existence of disease in the medulla probable, and a subacute poliomyelitis of the cord less important. A disease of the medulla analogous to this is described as a pseudobulbar paralysis occurring in children (Eisenlohr and Berger).

Still another group of cases are those with independent disease of the bulbar nerves of peripheral origin, a bulbar neuritis.

Quite different from any of these just mentioned are the cases of acute apoplectic bulbar paralyses. Their pathological picture shows hemorrhagic foci in the bulb and especially the consequent softening. Effusions of blood into the pons are by no means unusual events, but owing to the sudden death which they cause, they rarely give rise to bulbar paralyses.

Arteriosclerosis is the most constant etiological factor of acute bulbar paralysis, a form quite as common as the luetic endarteritis. Disease of the vessel walls followed by thrombosis and softening of the tissues is the sequence. Rarely emboli are carried to the cerebral vessels in endocarditis. The vertebrals and basilar are those most commonly affected, and obliterated arterioles must be most carefully searched for. This is particularly true of the arterioles supplying the pons, medulla and neighboring nerves. A case of Schultze's showed miliary aneurisms of the arterioles. Griesinger's and Moeser's cases were similar. A pressure atrophy of the neighboring parts was also present, besides diseased foci in both hemispheres near the lenticular nuclei, internal and external capsules and corpus striatum.

Hemorrhages, apoplectic cysts, areas of softening and sclerosis, may be found, occasionally disposed symmetrically. The cases reported by Magnus and Kirchhoff, in which lesions were discovered only in one hemisphere of the brain and showing clinically distinct pseudobulbar symptoms are discredited by Oppenheim, who contends that if serial sections of the opposite hemisphere had been thoroughly examined under the microscope, lesions would have been demonstrable.

With regard to the differential diagnosis: True (or Duchenne's) progressive bulbar palsy usually develops gradually, with continuous muscular atrophy and shows marked electrical changes, with fibrillary tremors, paralyses of the adductor muscles of the larynx, and death within one to three years, the mind remaining clear to the end.

Speech defects may result from paralysis of the palatine velum after diphtheria but can always be differentiated. Confusion may arise from the benign form of polioencephalitis in children which resembles the bulbar paralysis. Atrophy, however, is always present.

Myasthenia gravis with asthenic bulbar paralysis resembles pseudobulbar-paralysis very closely. This disease tends to recover. It is really a neurosis with no anatomical foundation. The ocular muscles are usually involved. But the most important symptom is the rapid exhaustion of the affected muscles by the Faradic current, yet still reacting to the will.

Pseudobulbar paralysis, an example of which I desire to show you, is marked by the apoplectic onset, absence (or asymmetry) of atrophy hemiplegia, diplegia or paraplegia, are present. The disease is remittent in progress, exhibits normal electrical reaction, cerebral disturbances, dysphagia, aphasia, and at times trismus. The cerebrobulbar form shows marked arterio-sclerosis and many cases have a luetic history. Mental phenomena are always present. Facial paralysis, hemianopsia, lip, tongue and oscular muscle paralyses occur. The extremities are involved, involuntary laughing and crying occur. The palate reflex is often lost. Dyspnea, dysphagia and increased pulse rate are at times present. It develops quite definitely after two distinct hemiplegic attacks often months apart.

In their five cases, Oppenheim and Siemerling carefully studied the entire nervous system by the most improved methods. In addition to the changes in both hemispheres, they found minute diseased areas in the pons and medulla, which had entirely escaped their observation in gross examination.

The pathological findings are first and most frequently arteriosclerosis, especially of the basilar vessels, often accompanied by dilatations and aneurisms. Diseased foci are constantly present in both hemispheres, the internal capsule, corona radiata, basal ganglia and rarely in the cortex, especially over frontal and placental lobes.

Grossly the pons and medulla very rarely show any diseased areas. Microscopically, however, —Oppenheim and Siemerling were the first to point this out—with care and thoroughness in a search of serial sections, the pons and medulla will surely show somewhere areas of sclerosis or softening. These foci are circumscribed and most often found in the transverse fibers of the pons (except the secondary degenerations), in the pyramidal tracts, the lemniscus, in the neighborhood of the fibers of the facial, and at times in the floor of the fourth ventricle.

A critical review of all cases in the literature indicates that the great majority which were completely studied show these minute lesions in the bulbar centers and in the sclerotic basilar vessels. The cases which do not demonstrate such foci, were for the most part insufficiently investigated.

In Léjune's cases the lesions were confined to the pyramidal fibers. Aneurisms in the basilar and left vertebral were demonstrable in Berger's case and some flattening of the pons. In another, atheroma of the basilar vessels and a lesion the size of a cherry seed near the exit of the trigeminus was observed. Eisenlohr's and Ross' cases showed somewhat similar conditions. Ochs in his inaugural dissertation concludes an otherwise finely described case by saying "Microscopic study of a preparation of the medulla, hypoglossus, vagus and accessorious showed no signs of degeneration." Thus demonstrating the incompleteness of his work.

A great number of cases reported as acute bulbar paralysis, have besides the bulbar disease lesions in the cerebrum, and the conviction is reached that the mixed cerebrobulbar glossopharyngo-labial paralysis is an especially frequent form of bulbar paralysis of apoplectic origin.

In two cases reported, Oppenheim and Eisenlohr's, atrophy of the extremities occurred. In spite of this complication of muscular atrophy with contractures and paresis and acute bulbar symptoms, a confusion of the condition with amyotrophic lateral sclerosis was impossible. In Eisenlohr's case the muscular atrophy of the upper arm was directly traceable to a circumscribed lesion due to disease of a basilar vessel. Optic atrophy when present is a point against true bulbar paralysis.

An important difference between the acute forms is the absence of atrophy in the pure cerebral form. Occasional occurrence of psychic disturbances, aphasia, hemianopsia, all indicate this

Difficult respiration and various respiratory disturbances do not occur in the pure cerebral form.

One of the Oppenheim-Siemerling cases is of especial interest. It was one of apoplectic bulbar paralysis with acute onset, developing in the course of five years remissions and exacerbations. Besides the paralysis of the extremities with contractures and exaggerated reflexes on all sides, there were paralyses of the facial, hypoglossus, vagus, spinal accessory, and difficult respirations with high temperature at times. On section the left vertebral showed an aneurismal dilatation, which was so considerable that a corresponding impression myelitis was left in the pons and medulla. The microscopical investigation of serial section showed most of the lesions in the pyramidal fibers. From these the process continued through the raphé, destroyed parts of the olivary bodies and injured the hypoglossal nuclei.

REPORT OF CASE.

J. P., white, male, aged thirty-eight years; occupation, clerk; was admitted to my clinic at the Baltimore City Hospital January 20, 1903, complaining of "bad locomotion." His parents were dead; cause unknown. There were no nervous diseases, tuberculosis, alcoholism or cancer in his family as far as he knew. Personal history showed measles as the only disease of childhood. Had been very bright at school. Gonorrhea twice. Alcoholic history very definite. Three years before admission patient had a hard chancre, followed by general secondary symptoms such as eruption, alopecia and mucous patches. Present illness began with an apoplectic stroke one year before. There was no loss of consciousness. His arm and leg were paralyzed, from which he partially recovered. Last month a second apoplectic attack occurred with loss of consciousness. He remained in bed almost to the time of his appearance at the clinic. Since this attack, he has been unable to walk well, use his arms successfully or speak in his proper tone of voice. He expresses himself with difficulty and catches himself laughing without any reason for it. At times he cries, being entirely unable to control himself and with no grounds for it. His memory is bad and he has much difficulty in swallowing and breathing regularly. He has no frequency of micturition, no dribbling and no loss of control of bladder or rectal sphincters. Notices no odd sensations, no formication, girdle sensation or flushings. He has suffered no pains; sleeps well at night and has normal appetite. Has never noticed any diplopia except when intoxicated. Is not suspicious of his neighbors or surroundings, has no odd dreams, sees or bears no false images. Does not hear voices or see "things."

Physical examination shows a well-nourished, plethoric individual with a strange articulatory disturbance of the character of a bulbar speech. There is a strong, nasal, forced tone, evidently due to a paresis of the palate.

Partial paralysis of the seventh nerve is present. The soft palate is paralyzed, as is also the tongue. There is no atrophy and the muscles respond well to the faradic current. There is a chin clonus, and some weakness of the masseters. Ophthalmoscopic examination is negative for neuritis or atrophy. The pupils are irregular, the left more dilated than the right. Lateral nystagmus is present. The perimeter shows no limitation or contraction in the field of vision. Upon laryngoscopic examination there seems to be some sluggishness in the action of the adductors. Dyspnea is present and the patient occasionally indulges in uncalled for laughter. The superficial arteries show very slight hardening. The pulse is of good tension, regular and 90 to the minute. Test words and sentences elicit no loss of memory or elision of syllables. There is some apathy and deficiency of concentration. He is well-nourished and has what Dr. Osler calls a Bardolphian fascies (hyperemic). There is a diplegic condition of both arms and legs, with contractures of the flexors of the forearm and hand and double pes equino varus. The deep reflexes of the upper extremities and the lower are very markedly exaggerated with a supinator clonus in the right arm and a bilateral ankle clonus. Babinski's reflex is present on both sides. There are no demonstrable sensory phenomena. Hemoglobin 85 per cent., r.b.c. 4,300,000 and leucocytes 6,500. Secretions show nothing unusual.

THE RATIONAL VS. THE "REGULAR" TREATMENT FOR TYPHOID FEVER: HANNA'S CASE, AND SOME OTHERS.

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THERE was nothing peculiar in the case of Senator Hanna, either as to the treatment or the result of the treatment, since the case was managed according to the highest art of forced-feeding and drugging, and the outcome was the same as happens in about fifty thousand cases of typhoid fever in this country every year. It is estimated that about 300,000 cases of this disease occur yearly in this country. Of these, 50,000 are killed outright, and the balance, though surviving, are still so depleted in physical stamina that fully one-fourth of those who are said to recover finally die of consumption, as we are told by the life insurance statisticians, whose business it is to know about it.

It is proper for us to remark here that out of the 50,000 fatalities, about 15,000 of the patients *had a right to die!* That is, about five per cent. of all cases of typhoid fever are, from neglect or one or other cause, so deeply diseased that even the highest skill would not avail to save them. That this is a liberal estimate is shown by the following statement of fact, relating to the practice of Drs. Brand, Jürgensen and Vogel, of Stettin, Germany. These gentlemen, some years ago, gave the history of 1,223 cases of typhoid fever, from hospital and private practice, treated by the "Brand bath" method (after the method employed by the late Dr. Ernest Brand), with only twelve deaths, one per cent. And we learn, furthermore, that of these twelve deaths, *not one occurred in any case that came under treatment before the fifth day of illness!*

The treatment employed consists in placing the patient in a tub bath to the ears, the temperature of the water at about 66° F., every three hours or so, when his temperature reaches 103° F. A heavy cold compress is placed over his head before he enters the tub, and during all the time in the water brisk hand-rubbing is given by the attendant, the patient helping in this, if able. The bath lasts about fifteen minutes, and the patient is placed back in bed, dripping, between the sheets, and is well blanketed and given some degree of rubbing and squeezing through the bedcovers if needed to restore comfortable warmth.

Forced feeding is not practised; that is, the patients above referred to were not forced to take any nourishment unless they felt a desire for it. But strict therapeutic fasting was not employed; had it been, it is my firm belief that the illnesses would have been shorter, and possibly another life or two might have been saved. In some of the cases as many as 30 and 40 baths were given; whereas, in my own private practice, in which no food of any sort, except water, is ever allowed until the patient is safely convalescent, and actually hungry, I have never, even in the worst cases, found occasion for more than five or six of these full, cold baths; and I have never lost a single case that came early under treatment. In all ordinary cases coming under my care at the onset of typhoid symptoms, I seldom find the full bath demanded; moderate hydrotherapy, as the damp body-bandage, cold compresses, etc., proving all-sufficient.

Even in the full bath treatment to the extreme limit, there is nothing in the least frightful about it, except to the minds of those, in or out of the medical profession, who are unfamiliar with the method. Properly managed, it is even delightful, *on the average,* to the patient, in that, aside from the first shock of the cold, on being taken from his warm bed and placed in the bath, his comfort is promoted; the dry tongue becomes moist; the head symptoms (delirium or partial delirium, headache, etc.) are banished; the parched skin becomes moist; the heart and entire nervous system are favorably affected, and convalescence is shortly secured.

It should be distinctly understood, however, that neither the bath, nor any other water treatment, is ever employed by one who *understands his business,* for the purpose of "downing the temperature" of the patient; but, solely for its effect upon the heart, the nervous system and the skin. The high temperature is in all cases but one of the means employed, so to say, by the animal organism for the elimination of disease-producing matter; it declines and disappears altogether, and the temperature becomes normal in good time, when the all-round treatment is correct.

About twelve years ago, Mr. W. J. U., of St. Paul, Mich., had typhoid fever and was treated by the family doctor by the method employed in the Hanna case. He was critically sick for two months, and he was several months convalescing. When he had been sick two weeks, his little daughter, six years old, came down with the same disease. The doctor doubtless diagnosed the case correctly; but, when the question of treatment came up, the mother, who had been corresponding with me in the interest of the two children, telegraphed me the history of the case and asked me to wire full directions for treatment, which I immediately did.

The little patient's temperature was 104.5° F. With extreme trepidation on the part of both mother and daughter, the latter was placed in the bath, *à la Brand;* but the effects were so satisfactory that the child begged her mother for another a few hours later. She had four tubbings during the first twenty-four hours, and one on the day following; she wore the damp bandage for several days, as follows: two-ply coarse towel wrung tightly from ice-water, with two-ply, same, dry outside, snugly pinned about the body from armpits to hips, the damp folds freshened as often as they became at all hot; meaning, in general, at intervals varying from a half-hour to 2½ hours, as the disease abates.

In the case cited the disease was speedily aborted, and the child was dressed and on the

street, well, within two weeks from the onset of the attack. There was an exchange of ten telegraphic despatches in all, and four letters of directions. There was in this case a fast of six days; she had a small potion of moderately hot water from hour to hour and all the fresh water she desired. This is the true physiologic diet, doubtless, during the progress and duration of all fevers. Under the reverse management, there can be, according to my belief, such a thing as "feeding a patient into typhoid fever"; that is, patients that go through the regular siege of the disease, under the forced-feeding plan, have the alimentary tract so irritated and inflamed, and the system so poisoned from the absorption of putrescent food substances, that the prolonged illness and death, if there be a fatal termination, may safely be attributed to the treatment, rather than to the original disease.

It seems beyond belief that any physician could be found, at this time, who would deny a typhoid fever patient all the water he craved; but, in fact, such an occurrence is not altogether rare. Water is withheld in great measure upon the theory that "large amounts of fluid interfere with the digestion of other and more nutritious food"; but, as Henry has so tritely remarked, under certain conditions there is *no other food that can truly nourish the body*. During the progress and at the height of typhoid fever, as Dr. Henry remarks, "the blood is of a dark, blackish-red color, and is generally obtained by needle puncture of the finger with more than ordinary difficulty," indicating conclusively a deficiency of water. On the other hand, the thickly coated tongue, sordes, and the generally parched condition of the mouth, indicate quite as clearly the utter lack of all the dissolving and preserving juices absolutely essential to the digestion of solid food or any other food but water. To call milk a liquid food seems to me absurd, when it is stated on high authority that the casein of a pint of milk is equal to a good-sized mutton chop, and is vastly more difficult of digestion; yet we know that as much as two or three quarts of milk are swallowed by a typhoid patient in twenty-four hours.

The results of this abuse of food have been vividly portrayed by the late Dr. Jenner, as follows: Twenty years ago, Sir William Jenner, in an address before the Midland Medical Society of Birmingham, England, referring to the vicious effects of forced feeding, said: "I have seen the patient restless, sleepless, his temperature raised several degrees above what it had previously been, vomit, eject a quantity of curd, and at once the restlessness cease, the temperature fall, the skin become moist, and the patient drop into a quiet sleep. All the threatening symptoms vanish with the ejection of the offending material. Or the undigested curds may accumulate in the bowel, inducing flatulent distention, pain, restlessness, and increased febrile disturbance. Under these circumstances I have seen an enema bring away a large vesselful of offensive, sour, undigested, curds. Or, again, the undigested curds may themselves (and this has not been an uncommon consequence of milk diet in my experience) irritate the bowels, and produce, keep up, or greatly increase diarrhea."

Hippocrates was a wonderfully wise man, and one of the wisest things he ever said, as it seems to me, was that it is best to withhold food *during the progress* of all fevers; and therapeutic fasting has from his day to ours been the sheet-anchor of every expert sick-room dietist in all acute diseases.

One other wise dictum from the same source should be borne in mind, viz., that "physic is the hardest medicine for the system to withstand." The fasting patient will shortly have no movements of the bowels; there is a normal closure, so to say, under these conditions. After convalescence is fully established, the condition of the stomach such as to make the digestion of food possible, and the patient hungry enough to take a half-slice of stale Graham bread for "pie" and pronounce it delicious, this will be a good risk. Two or three times a day, after a day or two, he may have a moderate portion of such bread and, say a few stewed prunes; but the bread is to be chewed by itself, not run down with sauce, or any other fluid but saliva. After a few days of feeding, the bowels will get in condition for a natural movement, but they should never be moved with physic; though occasion may arise in which an enema of a few cupfuls of cold water may be of use in stimulating the action of the lower bowel; but this only in case of the presence of waste matters otherwise difficult to expel.

No end of fever patients have emaciated to skeletons during many weeks of forced feeding, and finally died, largely from inanition, when they would have been convalescent by abstaining, early in their illness, from all foods save water for periods varying from one to two weeks. Such patients at times emaciate much faster on feeding than on fasting; in the first instance they are being both *starved* and *poisoned*, there being absolutely no nourishment in putrefying food substances, while the ptomaines resulting from such putrescence are often as fatal as arsenic or other deadly poison. Many and many a time have I seen emaciation lessen, pain made to cease, all bad symptoms disappear, and strength rapidly return to the fasting patient.

I think that I am not making an overstatement when I say that if every patient beginning to be feverish, with lack of appetite, nausea, etc., were treated on the plan herein indicated, the three hundred thousand cases of typhoid fever occurring in this country every year would be reduced to perhaps fifty thousand, and, of these, forty-five thousand would be restored to health after comparatively "comfortable sicknesses." This would mean a saving every year of forty-five thousand lives, a value to the nation of at least forty-five million dollars, while the saving effected by the shortened sicknesses (to say nothing of the saving of vitality to the restored patients) would amount up to many more millions.

There is a lamentable lack of interest among medical men concerning all such studies as are embraced in this paper. The reason of this is not far to seek: the medical schools give their graduates almost nothing in the way of teaching in hydrotherapy, and it is the almost universal practice with their professors and the hospital physicians to feed early and often, as if the question of digestion and assimilation, and not simply swallowing, were not at the bottom of all true feeding. In the discussion following the reading of an essay on Hydrotherapy, Its Scientific Basis, by Professor Putnam, of Harvard University, recently, Dr. Coggeshall insisted that "it is disgraceful that students should be allowed to graduate from our medical colleges with practically no systematic teaching in regard to non-medical therapeutics," and Dr. Rogers remarked jocosely that "medical colleges ought to cease to graduate men who don't know the difference between a Scotch douche and a hot Scotch." Kussmaul writes: "Of hydrotherapy the young physician knows almost nothing. Here is a great gap in the education of our physicians; here is the real cause of their inability to cope with the empirics for the favors of the public." Professor Credé, of Leipzig, states that "if physicians were better versed in these branches, the field of operation of many quacks would be greatly curtailed," which is only another way of saying that many quacks are more efficient in practice than the average regular practitioner. an admission as true as it is shameful.

MEDICAL PROGRESS.

MEDICINE.

Blood in Anchylostomiasis.—As characteristic changes of the blood in anchylostomiasis, C. HONORE (*Arch. internat. de Pharmacodyn.*, Vol. 12, fasc. 5 and 6) mentions an increase in the number of eosinophiles with the occasional presence of eosinophile or neutrophile myelocytes, or nucleated reds. The mononuclears and polynuclears undergo variations which are not in proportion to those of the eosinophiles. The percentage of the latter varied between 1.5 and 52. It could not be determined if their number depends upon the number of parasites, the age of the infection or other unknown factor.

Action of Roentgen Rays on Internal Organs.—If animals are exposed to the action of the X-rays, peculiar changes are found in the spleen. The pigment is excessively increased here, the follicles gradually disappear and the cellular elements of the splenic pulp undergo extensive rarefaction. The earliest of these changes, according to H. HEINEKE (*Münch. med. Woch.*, May 3, 1904) is the disappearance of the follicles; it can already be noticed several hours after exposure and ceases in twenty-four hours with small animals such as mice and rats. The nuclei of the lymphocytes in the follicles break up into fragments and are gradually removed by phagocytes. The same phenomenon may be observed in all lymph-nodes of the body, in the follicles of the intestines and in young animals also in the thymus. In the bone-marrow, the specific cells are destroyed and replaced by fatty tissue. With exception of a slight diminution in the number of leucocytes, the blood shows no change. When larger animals, such as dogs, were employed, the same lesions could be detected. An exposure of a quarter of an hour with a hard tube will suffice to bring about nuclear disintegration within a few hours. If the animals are killed after eight to fourteen days nothing pathological can be detected, which proves that regeneration is equally rapid. It is not at all impossible that the Roentgen rays may behave in a similar manner in man and that they may exercise a distinct therapeutic effect in pseudoleucemia, leucemia, lymphosarcoma and persistent thymus.

Value of Tuberculin Reaction.—That the tuberculin reaction is not infallible in the diagnosis of tuberculosis is clear, from the article of H. SMIDT (*Münch. med. Woch.*, May 3, 1904). His technic is as follows: After absence of fever has been assured for several days by four hourly measurements, one mg. of tuberculin in fresh solution is injected, then, after four to five days, five times this amount. In eight cases with positive reaction, tuberculosis was found at autopsy in only five, in three, ccarcinoma of esophagus and stomach were the sole lesions. In one there was no reaction, yet evident tuberculosis. Despite such small doses and great care in injecting, serious accidents may occur and a latent process may suddenly become active and even lead to a rapid fatal issue. This happened to the author in three cases—one of leprosy combined with tuberculosis, one of incipient apical tuberculosis and one of affection of the serous membranes. A source of error is to be found in hysterical patients; they sometimes react after tuberculin injections and even after injections of plain water.

Chemical Detection of Digitalin.—Two tests are available to determine the presence of digitalin in organs, namely, the purple color developing when bromine is added to a solution in concentrated sulphuric acid and a green color if boiled with phosphomolybdic acid. C. BINZ (*Arch. internat. de Pharmacodyn.*, Vol. 12, fasc. 5 and 6) has discovered, however, that a large number of other glucosides, alkaloids, etc., give exactly the same reaction, so that a serious error would be committed if too much reliance were to be placed upon these tests. The physiological test is thus indispensable, though certain alkaloids developing after death may influence the heart in the same way as digitalin.

Effects of the Roentgen and Radium Rays on Cell Division.—That these agents have a well-marked inhibitive effect on division in both animal and plant cells, is the claim made by G. PERTHES (*Deutsche med. Woch.*, April 28, 1904). For the purposes of demonstration he selected the developing eggs of *Ascaris*, a round worm which is parasitic in the horse, and was able to show that the X-rays exerted a distinctly harmful effect, independently of whether or not nuclear division had begun. The effect does not appear at once, but comes on later as development proceeds, the latter being characterized by an irregular course and the production of abnormal end products. Analogous results were obtained when the radium rays were employed. Exposures of growing plant roots to the influence of both varieties of rays also disclosed a marked inhibitive action in their growth. The author suggests that the effects are in all probability due to the production in the living cell of substances which damage the chromatin in the nucleus.

Significance of Blood in the Feces.—An extensive series of observations were undertaken by G. JOACHIM (*Berl. klin. Woch.*, May 2, 1904) for the pur-

pose of determining the presence of blood in the feces in all conditions where a hemorrhage in any part of the gastro-intestinal tract might have been present. The guaiac and aloin tests were both employed. It was found that in all cases where the presence of blood in the stools could not have been explained, the tests were always negative. Even the presence of a slight epistaxis resulted in a positive test, which rarely occurred after a hemoptysis however, probably because in the latter case the sputum is not as a rule swallowed. Among malignant tumors of the alimentary tract, the tests were positive in every instance, the only exception being a carcinoma of the esophagus. The hemorrhage was regular but always weak. In contrast to this were the cases of gastric ulcer, where positive results were secured in over 80 per cent. of cases, but where the bleeding was more profuse and irregular, and at times was entirely absent from the stool. Other ulcerative processes showed a much less tendency to hemorrhage, in cases of tuberculous enteritis blood was never found in the stools. In typhoid it was possible, however, to detect slight bleeding by the tests before any gross evidences were present, and such a means of diagnosing premonitory hemorrhages may be of value. The tests were entirely negative in all the ordinary gastric catarrhs, in gastroptoses, and in all processes immediately surrounding the intestinal tract, appendicitis, subphrenic abscess, etc. Where there was marked venous congestion present, as in cardiac disease with disturbances of compensation, blood could be repeatedly demonstrated in the stools, which disappeared as soon as the congestion was relieved. In catarrhal jaundice, the tests were positive, but in cases of cholelithiasis, they were always negative. The presence of blood could always be demonstrated in cases of secondary carcinoma of the liver. Although these tests have undoubted clinical value, their diagnostic value is not so evident on account of the large number of diseases in which intestinal hemorrhages can be demonstrated. The knowledge gained may be of value, however, in tracing the progress of a disease, such as gastric ulcer, and also in this manner judging the effect of the various schemes of treatment. To avoid the possibility of error, the author recommends that both tests be employed, one being a control on the other. Other factors to be borne in mind as invalidating the final results, are the possibility of an admixture of menstrual blood or that derived from hemorrhoids, bleeding gums or nose, and swallowed blood-stained sputum. In addition the tests have resulted positive when the patient had eaten food containing blood, such as raw meat.

Hematuria in Barlow's Disease.—Attention is called to the fact that a hematuria may be the only evident symptom of scurvy, by E. NETER (*Deutsche med. Woch.*, May 5, 1904). He reports a typical case in an eight-months-old infant, well developed, and fed during the previous four months exclusively with malted foods. The child did not seem quite well, but nothing was found on examination except the presence of blood in the urine. The diagnosis of scurvy was made by exclusion, and within eight days after changing the food to raw milk, the child was cured and no further blood could be detected in the urine. When hematuria appears during the end of the first year or later, and any affection of the bladder or the kidney can be excluded, the presence of scurvy should always be suspected. In doubtful cases, antiscorbutic treatment will soon afford a definite conclusion.

Effects of Facial Anomalies.—In addition to the known anomalies in different parts of the body which may exhibit a tendency to be far reaching in their effects, V. BABES (*Berl. klin. Woch.*, May 2, 1904) describes a class of cases where a primary, deep-seated anomaly of the face, and especially of the base of the skull, may lead to marked changes in the four extremities. He has had an opportunity of observing a series of such cases where the cranial anomalies were principally marked by early ossification and sclerosis of the base of the skull. The changes in the extremities usually affect all four, although the upper ones are often most marked. They may be manifested in three ways, (1) by the absence of a toe or a finger, or as general shortening of the limb; (2) by an increase in the number of fingers or toes, or a general increase in the size of the limbs; (3) by a change which includes a partial excess and defect, such as an increase in the number of metatarsal bones, with amalgamation of either fingers or toes, and increase or decrease in the length of the extremities. A remarkable fact about these phenomena is the symmetrical arrangement of these deformities as well as their resemblance to certain animal groups, the arthrodactylates, perissodactylates or the bidactylates. He details a number of cases to illustrate these observations and believes that there is a region of the skull which stands in close relation to the development of the extremities. In other words, that a center must be assumed to be in this region which determines the normal development of the extremities and any change in shape or character of the former will have as result an abnormal growth of the limbs. A further knowledge of this process may aid in clearing up some of the mysterious factors which underlie the differentiation of the various races and classes of animals.

A Rare Human Parasite.—Some three and a half years ago it was reported that a parasite found in cats and dogs in several countries of Europe and also in Siberia, had in two instances occurred in the human body. This parasite is the *Distomum felineum*. M. ASKANAZY (*Deutsche med. Woch.*, May 5, 1904) who first reported the disease in man has now made some further studies on its pathology. One of the cases in question had been diagnosed as tumor of the liver together with occlusion of the inferior cava. At autopsy there was found an extensive carcinoma of the liver, with numerous distoma and their eggs in the biliary passages. The same were also found in another man who had an ischias. The author has studied the possible relation of the parasite to the occurrence of the carcinoma in these cases and also the paths of infection. On investigating the stools of a number of patients suffering from the presence of tapeworm, for this parasite had also been found in the other two cases, the *Distomum felineum* was present in five. All these patients lived in a sea-port city. The fact that carcinoma of the biliary passages was also determined in a number of other cases, where the parasite was at the same time present, leads the author to believe that the epithelial proliferation due to their presence may possibly form a predisposing cause for the production of the cancer. Efforts to find the source of the infection resulted in the discovery that cats and dogs fed with raw fish, mainly the roach (*Leuciscus rutilus*), became infected with the parasite. This evidently accounts for the rather extensive distribution of the parasite in cats in sea-port towns. It is finally to be noted that one of the patients stated that he had been accustomed to eating raw fish.

Further experiments are now in progress in order to determine whether it is possible to produce cancerous growths in dogs by feeding them the infected fish. The intermediate form of the parasite has not yet been demonstrated and the complete cycle of development has therefore not been fully worked out.

Action of Formalin upon Urine.—Since formalin is being used more and more to preserve urine, it is interesting to study its action upon the chief chemical ingredients. C. STRZYZOWSKI (*Therap. Monatshefte*, May, 1904) reports as follows: Urea combines with formalin, forming a leucin-like sediment. This reaction may be used as test for urea; it is hastened by the addition of hydrochloric acid. Uric acid also combines, so that if precipitated, it will redissolve. Creatin and creatinin are not altered and the usual reactions are not interfered with. The same holds true for urobilin. With indican, however, 0.2 per cent. of formalin will render the ordinary reactions faint, and with one per cent. it will be absent altogether. The behavior toward albumin varies; sometimes traces are no longer precipitated on boiling preserved urine. The influence upon sugar, pentose, glycuronic acid, acetone, diacetic acid and oxybutyric acid is very slight, while bile-principles may be precipitated with the urea, from which they can be dissolved out by means of acid alcohol. Pettenkoffer's reaction is no longer possible in the presence of formalin. Summing up his observations, the author concludes that formalin is not suited for preserving urine, since it interferes with many important reactions.

Hemoglobin in Chronic Heart Disease.—Most cases of chronic endocarditis suffer from anemia and iron can often be taken for months without improvement. A. SCHOTT (*Münch. med. Woch.*, May 10, 1904) has often been surprised by the change of appearance of patients at Nauheim. A series of hemoglobin estimations show that with the customary physical and dietetic measures the blood improves markedly even where iron is withheld. As the figures approach normal, the symptoms disappear and the color returns.

Hemoglobin Estimation of Blood.—In contrasting the hemoglobin estimation of the blood with the Fleische apparatus with the actual determination of iron with the ferrometer, J. MITULESCU (*Zeitsch. f. klin. Med.*, Vol. 52, Nos. 3 and 4) finds that both figures agree very accurately unless the color of the blood is changed as in icterus or leucemia, or the blood is considerably altered so that the serum contains a considerable amount of iron owing to disintegration of red cells. In the latter class of cases, the percentage of iron of hemoglobin are not identical and both estimations are necessary.

Quantitative Determination of Pepsin.—J. A. GROBER (*Arch. f. exp. Path. u. Pharmak.*, Vol. 51, Nos. 2 and 3) has previously discovered that the pepsin normally present in every urine can be easily removed by digesting the urine with flakes of fibrin. The pepsin adheres very firmly to the latter and can only be washed off by dilute solutions of hydrochloric acid. It is probable that pepsin in the presence of acid forms a definite chemical compound with the latter for the critical temperature, that is, the temperature at which pepsin ceases to digest albumin is higher than with pure pepsin. A solution of acid, standardized against alkali with Congo-red, will possess a higher titre than the same solution in the presence of pepsin since pepsin shares the property of all proteids of neutralizing acid. In order to determine the amount of pepsin in a solution, a simple titration with standard acid solution will be sufficient.

Myxedema.—All cases of adult myxedema observed by A. MAGNUS-LEVY (*Zeitsch. f. klin. Med.*, Vol. 52, Nos. 3 and 4) came from regions where goiter is not endemic and some previous infection, such as erysipelas or influenza seemed to be the cause, or at least to stimulate the latent process. Tuberculosis certainly plays a minor rôle, if any at all. The most intense swelling affects head and face, and the rest of the body may be free except that the skin is usually dry and cold. In some the thyroid is enlarged and hard, in others it is absent altogether. Other common symptoms are cardiac changes, loss of sexual function, tremor, hippopotamus-like gait, loss of memory, apathy and depression. Complete idiocy is infrequent and very severe cases may present normal intelligence. Most cases were cured or very much benefited by thyroid medication. Sporadic cretinism also occurs in regions free from goiter and the disease generally dates back to the first years of life. The etiology is equally obscure; the symptoms correspond with those of adult myxedema, and treatment is generally successful. Endemic cretinism is more refractory toward treatment only if the diseased habitus has been transmitted through several generations. The first favorable symptoms which manifest themselves when thyroid is given, are a moderate perspiration and a sensation of warmth over the body soon followed by disappearance of constipation and changed voice. Equally good results were obtained with tablets, thyreoglobulin and iodothyrin, but thyreoantitoxin, iodide of potash and hypophysis tablets had no effect. It is often advisable to combine the treatment with baths, quinine, iron, arsenic and milk with vegetable diet. A large number of experiments conducted upon the patients showed that the respiratory exchange of gases is very much reduced owing to the diminished vital energy of the tissues, but it improves steadily with thyroid medication.

HISTOLOGY, PATHOLOGY AND BACTERIOLOGY.

Multiple Arterial Thrombi.—Sometimes occlusion of large vessels and sudden death occur in patients suffering from a lesion of the mitral valve and a diagnosis of embolism is generally made. H. EICHHORST (*Deutsch. Arch. f. klin. Med.*, Vol. 80, Nos. 1 and 2) is, however, inclined to view the process as thrombotic in nature, since the large masses found on the vessels are often altogether out of proportion to the small, delicate excrescences upon the diseased valves. Even if thrombi are present in the left auricle, their smooth surface argues against the possibility of an embolism. In a case observed recently the abdominal aorta from 12 cm. above the bifurcation, together with the left and right femorals, the superior mesenteric, the left renal, splenic, right pulmonary, left inferior thyroid and left carotid were found filled with clot. The immediate cause of death was occlusion of the mesenteric artery, and though the patient died half an hour after the accident and autopsy was performed only four hours after death, the intestines were already the seat of a hemorrhagic infarction and a peritonitis was beginning to develop. To decide the question of thrombosis or embolism, the walls of the affected vessels were examined microscopically. An intense inflammation was discovered here, probably set up by bacteria entering the vasa vasorum, incident to the recurring endocarditis. It is thus not difficult to understand that a thrombosis

may set in as suddenly and with the same symptoms as an embolism. The number of vessels occluded is frequently surprising and often the patients present but few symptoms.

Action of Fluorescing Substances on Toxins.—If diphtheria toxin is mixed with eosin or some other photodynamic dye, and then exposed to sunlight, many times the fatal amount may be injected with impunity. H. v. TAPPEINER and A. JODLBAUER (*Münch. med. Woch.*, April 26, 1904) injected diphtheria toxin into guinea-pigs after the animals had received a small dose of eosin or methylene blue for a few hours before. The site of injection was then exposed to the sunlight. The animals remained alive three times as many days as control animals after three to four times the fatal dose. The same holds true for tetanus toxin. The possibility of treating diphtheria and tetanus in man with these substances is seriously considered and snake poison would probably be influenced in the same way. There may be some advantage in choosing from the group such substances which have a special affinity for the tissues affected such as methylene blue in tetanus, where the nerve-tracts are principally involved.

Primary Endothelioma of Pleura.—One of the most interesting of tumors is the pleural endothelioma, since many questions concerning its origin and character are yet undecided. B. BONHEIM (*Münch. med. Woch.*, April 26, 1904) is of the opinion that the growth may start both from the lymphatic and pleural endothelium, since both classes of cells are of the same type and origin. Pathologically, two forms of tumor may be recognized: In one the pleura is uniformly thickened, so that the condition may be difficult to distinguish from callous pleuritis; in the other the pleura is studded with small nodules, suggestive of acuminated condylyomata. The diagnosis is often difficult, but the following points are of importance: The exudate is generally upon the left side and serous in character at first. After every subsequent puncture, however, it becomes more hemorrhagic and finally has a dark chocolate color or suggests pure venous blood. Later punctures yield less and less blood and finally the heart will no longer return to its normal position. Very late in the course it may be necessary to puncture every few days. Microscopical examination of the fluid shows absence of tubercle bacilli and often groups of vacuolated tumor-cells. Despite the fact that the circumference of the thorax on the affected side is much increased, the ribs will approach each other, owing to pleural shrinkage. Other symptoms are gradually increasing scoliosis, severe pains and dyspnea. Frequently a resection of the ribs will considerably alleviate the patient's suffering, though it will hardly postpone the fatal issue.

Origin of Basophile Granules.—At present there is still considerable doubt as to the origin of basophile granules formed in red blood cells, some believing they are remnants of nuclei, while others believe them to be a peculiar form of degeneration. O. BOELLKE (*Virchow's Archiv*, Vol. 176, No. 1) has studied the blood in 43 cases of posthemorrhagic anemia and has found marked increase of polychromatophile erythrocytes with leucocytosis, but never megaloblasts or basophile granules. The same results were obtained after bleeding animals. Granules were also looked for in vain in embryos and in the newly-born, hence it is exceedingly improbable that they are derived from nuclei or stand in any relation to regeneration. Where the nemorrhage took place into the gastro-intestinal tract, an occasional punctate cell was found after some time, probably because the decomposition of bleed in the intestines led to the absorption of toxins. To prove that this can happen it is only necessary to administer some artificial blood-preparation, when the same granulations can usually be detected. There are especially common in pernicious anemia and there is every reason to believe that this disease depends upon an intestinal auto-intoxication, for the granules will disappear and the patients improve visibly if stomach and intestines are irrigated regularly, and if vegetable food, hydrochloric and citric acids are given. Another proof that stippling has nothing to do with disintegration of nuclei, is found in the behavior of blood toward pyronin and methyl green; all nuclei and their remnants will appear bluish-green, while the granules take on a bright red hue. It is also questionable if polychromatophilia has anything to do with karyolysis; probably it is merely a manifestation of protoplasmotic degeneration.

Nature of Symmetrical Disease of Lacrimal and Salivary Glands.—The microscopical examination of the glands of a case of symmetrical swelling excluded simple hypertrophy and led M. WALLENFANG (*Virchow's Archiv*, Vol. 176, No. 1) to group the conditions among pseudoleukemias. Why the toxins, which no doubt are the underlying cause, should select an isolated group of structures, could not be determined, but an affinity for certain tissues is a peculiarity which is noticed with many other poisons. The swellings are certainly not due to microorganisms, for no bacteria could be detected in the tissues with the usual stains.

Relation Between Acromegaly and Tumors of the Hypophysis.—In one case of pituitary tumor without signs of acromegaly examined by G. CAGNETTO (*Virchow's Archiv*, Vol. 176, No. 1), the tumor had destroyed the tuber cinereum and the corpora mammillaria and has penetrated into the lateral walls of the third ventricle. The tumor was a polymorphous telangiectatic sarcoma which had taken its origin from the anterior portion of the organ; its posterior portion was found compressed into a narrow strip of gland tissue along the floor of the sella turcica. In a second case, the typical skeletal and visceral changes were pronounced; the tumor, a hyperplastic struma with advanced adenocarcinomatous degeneration, had destroyed part of the sphenoid bone and had formed metastases along the spinal cord. The first case proves that the hypophysis may be the seat of a large tumor without acromegaly; the second argues in favor of the theory that acromegaly is a disturbance of metabolism which stimulates the bones of the skull and of the extremities to increased growth and sometimes the hypophysis to active hyperplasia.

Elastic Tissue in Tumors.—According to B. FISCHER (*Virchow's Archiv*, Vol. 176, No. 1) it is a mistake to believe that elastic tissue never participates in tumor formation. The great majority of benign and malignant growths contain but little elastin; in fact they show a decided tendency to destroy the fibers of the surrounding tissues by pressure and disintegration. Yet in others there is so much that the name "elastoma" would not be inappropriate. Among these are cavernous growths of the skin, certain cancers of the breast, endotheliomata of the dura, many fibroids and sarcomata. Occasionally the elastic tissue is not present in the form of fibers but as granules. Mixed tumors of the parotid and testes also give the reaction frequently. Often it is difficult to distinguish mucin and cartilage from elastin but Weigert's stain, if followed by prolonged differentiation in absolute alcohol, is specific.

PEDIATRICS.

Scurvy from Humanized Milk.—Municipal milk depots unquestionably do a great deal of good, but with the approach of summer, attention should be called to the fact that not only American observers in considerable numbers but those of Europe as well have recently

begun to recognize that there is an element not strictly human in the unlimited production and too free distribution of this so-called humanized food. HENRY ASHBY (*Brit. Med. Jour.*, Feb. 27, 1904) states that conditions which may well be called parascorbutic, but which are not sufficiently advanced to give the actual bone degenerations seen in scurvy, are apparent on careful observation in all children's hospitals where this form of feeding is employed in a proportion of about 6 to 1. There is anemia, anorexia, diarrhea, hematuria and sometimes a zone of pinkness at the roots of the finger nails. It costs the municipality a good deal of money to produce this humanized milk, because the rates at which the artisan class can afford to pay for it in England at any rate, does not begin to cover its cost. It is, therefore, of very great importance to know whether or not this well-meant effort is producing men and women of bone and brawn.

Lymphosarcoma of the Mesenteric Glands in a Three-year-old Girl.—This was the case of a child who was brought to the hospital with an enlarged abdomen which on palpation proved to be the seat of a soft swelling located in the right pelvis. KOVOLKOFF (*Roussky Vrach*, No. 10, 1904) elicited a history of trauma to the right side of the abdomen which was followed by hardening at the site of same. The child was rather pale, although fairly well nourished, with an occasional hectic flush due to variations of temperature. The circumference of the abdomen was 61 cm., and this kept on increasing until it reached 68.5 cm. in ten days; during this time the child's weight also increased five pounds. The heart as well as the lungs, though normal, were pushed upward so that the upper border of cardiac dulness was elicited at the third rib, and the lower border of the lungs was pushed up one rib higher. Every movement was accompanied by considerable dypsnea; respirations between 26 and 40 per minute; pulse 120. In view of the rapid growth of the tumor an abdominal section was performed and a bleeding tumor was found which was attached to the peritoneum. As it was impossible to extirpate the growth the abdominal wound was closed, and the patient was left to her fate. Her condition grew steadily worse, the body-weight kept increasing, although it fell soon before the fatal issue. There was severe dyspnea, edema of the extremities and stupor. On autopsy the tumor was found microscopically to be a lymphosarcoma, consisting of the same small cells as lymphatic tissue; the matrix of the growth could not be distinctly made out because of the great number of the cellular elements.

Postdiphtheritic Paralysis.—Notwithstanding the value of the diphtheritic antitoxin the various complications and consequences attendant upon the disease have not been greatly diminished by the use of it. The postdiphtheritic paralyses do not at all depend on the severity of the disease and are to be seen in grave as well as in comparatively light cases. N. F. DOURBROVSKY (*Prakt. Vrach*, No. 9, 1904) describes two cases in boys ten and three years old respectively, in one of whom he found a typical paralysis of accommodation in both eyes as well as paralysis of the soft palate. This boy was treated with antitoxin (diphtheria) one and a half months before; the younger child suffered from strabismus and poor sight of the right eye. The older boy had a very severe attack of diphtheria. The pupils did not respond to light, the right is somewhat larger than the left; there is also some nystagmus in the right eye. There are no signs of anesthesia or paresthesia; the facial nerve is intact. The nasal voice and the ejection of food through the nose pointed to paralysis of the palate. According to the parents the disease was not accompanied by edema or any other symptoms that would point to premia. The strabismus appeared in the younger child suddenly, over night, accompanied by pain in the eye. It is so strongly convergent that the eye is turned entirely toward the nose. As regards treatment, the older boy was prohibited all school work and directed to wear dark glasses in view of the pronounced photophobia; both children were given strengthening diet, and the older boy Fowler's solution. Both children got well in about five weeks.

Bladder Irritation of Girls.—Little girls are more liable to urinary incontinence than boys. Every one is called upon to treat these little patients, and the condition is sometimes a difficult one to compass. If the urine contains blood and mucus, the following conditions naturally suggest themselves: Diabetes, azoturia, calculus, tubercle or malignant growth. The last are rare and improbable. W. D. SPANTON (*Med. Press*, Feb. 24, 1904) states that he has found that a form of woolen undergarment, frequently used in England, has often been the cause of incontinence in little girls. The woolen hairs in this rather loosely woven tunic, if the garment fits the body closely, rub off easily and lodge on the labia. These woolen hairs are fitted with minute hooks which enable them to pass upward through the urethra into the bladder. Several children which he has examined and successfully treated have presented just this condition.

EYE, EAR, NOSE AND THROAT.

Treatment of Ozena.—It has been suggested by several observers that some etiological relation existed between this disease and abnormal width of the nares, and the proposition was therefore made to influence the course of the process by diminishing the size of the opening. This may be accomplished by the injection of paraffin into the inferior turbinate bone and H. FLIESS (*Berl. klin. Woch.*, March 17, 1904) has employed the method in 12 cases. The nose is carefully cleaned and all crusts removed. The site of operation is then thoroughly cocainized and the paraffin injected into the most atrophied part of the turbinate and if necessary into the septum. Both sides may thus be treated at one or more sittings. All the cases showed distinct improvement, the relief from symptoms being very marked, although in no instance did a complete cure result. The only unpleasant sequelæ were pains in the frontal region in a few cases, which disappeared, however, in the course of a day. Hard paraffin, with a melting point of 50 to 52° C., is recommended as being most suitable and safest.

Choroidal Inflammation Due to Excessive Use.—Although continuous use of the eyes on small objects is frequently mentioned as a cause of inflammatory action, such cases are seldom seen in previously normal eyes and especially only after very prolonged use. D. B. ST. J. ROOSA (*Med. Rec.*, Feb. 20, 1904) reports the case of a physician who, after reading almost continuously for about ten hours, found that there was a blur over his eyes, apparently both being affected at first, but later he concluded only the right was involved. He took no pains to rest the eye and the condition remained about the same for six weeks, when he consulted the author, and it was found that the vision in the right eye was $^{20}/_{70}$ and the vitreous lumen was hazy. The left eye was normal. The case was seen several times during the subsequent five or six years and the vision in the right eye remained just the same. The haziness of the lumen cleared up and several spots of choroidal atrophy were to be seen. The retina was not at all involved and the process evidently did not progress. It is interesting to note that this is a traumatism instead of an infection of the eye and that such mechanical causes may appar-

ently produce conditions entirely similar to those from pure infection.

Celluloid Plate in Saddle-Nose.—Although the results obtained by paraffin injections have been, on the whole, satisfactory in rectifying deformities of the nose they are not entirely void of danger, for several cases of embolism have followed the use of this material. J. WIENER, JR. (*Med. Rec.*, April 16, 1904) successfully introduced a celluloid plate some three years ago in a case of marked deformity with subsequent most happy results. He made an incision about one-quarter of an inch long on the under side of the nose and through this small incision with iridectomy scissors, a subcutaneous flap was made over the depressed bridge of the nose. A piece of celluloid plate about half an inch wide, an inch long and a thirtieth of an inch thick, was sterilized by boiling for a few minutes in soda solution, readily molded to the shape of the bridge of the nose, and then introduced through the small opening until it occupied the space of the subcutaneous flap. One suture closed the wound, and to avoid pressure no dressing was applied. Only slight swelling occurred, and no subsequent discomfort has appeared from the presence of the plate. The profile of the face is very satisfactory.

GENITO-URINARY AND SKIN DISEASES.

Mercurial Exanthemata.—The most common form of mercurial eruption, according to E. TOMASCZEWSKI (*Zeitsch. f. klin. Med.*, Vol. 51, Nos. 5 and 6) is mercurial acne, such as occurs on the hairy parts of the extremities in the form of nodular infiltrations of livid color, about a hair follicle. This, as well as various forms of transient dermatitis on the flexor surfaces of joints are only induced by the external application of the drug. Eruptions after internal use may be of manifold character, from an erythema without desquamation or subjective symptoms up to severe vesiculation and pustulation with involvement of nails, hair and the mucous membranes and such severe constitutional disturbance that a general disease may be suspected. Thus measles, scarlet fever, erysipelas, hemorrhagic purpura, multiform exudative erythema and acute eczema may be simulated. Even the diazo-reaction may be positive. The appearance of an eruption is independent of the combination employed and of the way it is employed. There is nothing typical about form-grouping and distribution of the lesions but the peculiar violet color, extensive desquamation and the rapid disappearance after the drug is stopped, are often typical. If the drug is introduced anew, the diagnosis can often be made by observing an exacerbation. In some cases mercury can be detected in the urine and the feces. Idiosyncrasy plays an important rôle, but it is more an idiosyncrasy of organs than individuals, for in some the skin is readily affected, in others the internal organs, in still others the nervous system. Patients who react readily by salivation and rise of temperature must be classed among the latter. Strangely enough, the organs in which mercury is usually deposited, are not the same as those affected by idiosyncrasy. The same organ will generally continue to react even where the method of application is changed. In conclusion, a peculiar local reaction in syphilis is mentioned which may be of diagnostic value. Twelve to twenty-four hours after an injection of salicylate of mercury a macular or maculo-papular luetic eruption will spread or become confluent and the color will become more violet, so that the experienced can suspect that an injection was given, if he has seen the case before.

Etiology of Alopecia Areata.—Since the publication of Sabouraud's work on seborrhea oleosa and its bacteriology, a great impulse has been given to the trophoneurotic theory of its origin. The old belief, of course, was that it was invariably of a parasitic nature. ARTHUR WHITFIELD (*Lancet*, March 5, 1904) states that although Sabouraud was forced to give up his belief that seborrhea was the cause in all cases and to differentiate a special variety in children, stated to be due to some cause other than invasion of the microbacillus of seborrhea. Recently Jacquet has directed attention to the abnormalities in the dentition of these children, which he supposes to have produced a sufficient increase of nervous irritability to account for the bald spots. Although but little work has been done on this subject to prove or disprove the contentions of this last observer, the author believes that it is probable that nerve irritations, particularly of sight, may in certain cases be responsible for the disease. Headache and localized neuralgia, as is well known, have often been accompanied by alopecia areata. He cites four cases in which he found the vision defective, in each of which persistent local treatment was without avail. All four cases were promptly cured by the use of suitable glasses.

THERAPEUTICS.

Red Light Treatment of Smallpox.—If it be questionable whether or not we have as yet isolated the sporozoon of this disease, there is no doubt that advances have been made in the manner of its treatment. J. T. C. NASH (*Lançet*, March 5, 1904) records 12 cases treated in ordinary light and 13 treated under red light. In the first table, there were four deaths. In the second table there was but one. Medical treatment was practically confined to acetozone, about six grains a day. The author believes that the suppurated stage was considerably modified by the influence of the red rays or by the exclusion of the other light elements. The one death recorded was from confluent hemorrhagic smallpox, the case being moribund on admission to the hospital. One disadvantage of a red light ward is that the physical appearance of the smallpox eruption cannot be appreciated or demonstrated as is possible in ordinary daylight.

Treatment of Eclampsia.—The employment in eclampsia of chloral hydrate in suppositories is an old and well-tried remedy, and MANSUROFF (*Prakt. Vrach*, No. 11, 1904) reports a case where this drug has undoubtedly saved the life of a twenty-year-old primipara that is of sufficient impressiveness to be abstracted here. The woman when brought to the hospital had a series of extremely severe eclamptic attacks that seriously threatened her life. She was at once given an enema, and then after an evacuation of the bowels, a glass of warm water was injected containing 15 gr. of chloral hydrate and 10 drops of the tincture of opium. As this was not retained for any length of time, another one was administered; cold to the head and mustard on the neck. The condition of the patient precluded the possibility of any internal administration of drugs. In 3½ hours a third clyster was administered; by this time the convulsions ceased though the patient was still unconscious. Eight hours later the patient opened her eyes and complained of vomiting. A fourth clysma was given which induced quiet sleep for an entire day. Later on uterine contractions supervened, and the patient gave birth to a live, strong baby. There was an alarming post-partum hemorrhage, after which the patient felt considerably relieved, "much clearer in her mind." Post-partum course normal. Altogether there were nine attacks, of which four were of great severity, lasting over five minutes each and followed by unconsciousness of many hours. It is hard to undestand why sciousness of many hours. It is hard to understand why as possible, by either version or forceps.

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SMITH ELY JELLIFFE, A.M., M.D., Ph.D., Editor.

No. 111 FIFTH AVENUE, NEW YORK.

Subscription Price, including postage in U. S. and Canada.

PER ANNUM IN ADVANCE	$4.00
SINGLE COPIES	.10
WITH THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES, PER ANNUM . .	8.00

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LEA BROTHERS & CO.,

No. 111 FIFTH AVENUE (corner of 18th St.), NEW YORK.

SATURDAY, JULY 9, 1904.

RACIAL DEGENERACY AND AMERICAN PROGRESS.

LONG before the days when Horace described the old man as *laudator temporis acti se puero*, a praiser of times past when he was a boy, it was the custom for the elders of each successive generation to insist that things are not what they used to be, and that while the end may not exactly be in sight, at least it is being approached with giant strides now that they are no longer young. The world has not changed much and every generation since Horace's time has had many who have felt this way.

In our day everybody dabbles in medicine and as a consequence medical terms are used to express pessimistic ideas, and racial degeneracy and the like are heard on every side as one of the easily recognized signs of the times. We are not of marked pessimistic tendencies ourselves, and so we are glad to note that at least one of the important magazines, *The World's Work*, is ready to lend its columns to a disproof of the idea that our generation is degenerate, and to show on the contrary that there is noteworthy proof of progress in every department of life.

Of course this will not suit the pessimistically inclined. There are many followers of Schopenhauer, of whom some one recently said that he was never so happy as when he was realizing how miserable he was. It would be well, however, for some of the croakers to consider seriously how ample an apology can be made for our present conditions, for the series of articles mentioned seems to make out a very good case for the theory that conditions in American life are growing better every year. Our schools are better, our educational system is constantly developing, and our great universities are coming to be examples to the world in their line. In spite of the frequent assertion of the lack of esthetic sense among Americans, the appreciation for art is widening every year, and the liberal patronage of art is becoming the fad of every American who has any money.

Notwithstanding alarmist reports in sensational newspapers there is less dishonesty and those who are engaged in questionable financial operations are being pilloried in public in a way that shows a higher sense among the people of morality in contradistinction to mere legality that is very promising for the future. Charity organization has done its work; our tenement houses have been improved so that now life has become much more livable in the slums and health is much easier to maintain. If we consider the difference in the conditions that obtain at the present moment in New York's most thickly populous district, bad as they may still be, and admitted to be in many ways still capable of improvement, they are so far above those which were common even a quarter of a century ago as to make the comparison seem indeed odious. Even municipal beauty, for its own sake and for its uplifting effect upon even the lower classes, has become an object in the civic life of great cities and all the citizens are sharing in the inspiring effect of the application of art principles even to our city streets and vistas.

Long ago Edward Everett Hale said "Look up, not down; look in, not out, and lend a hand." At the present moment there is much reason to be proud of what has been accomplished in recent years by those who have not idly talked race degeneracy, but who have shown ways and means and possibilities of improvement. The present generation is not a bit worse than any of its predecessors and is in many respects decidedly better. There still remains much to be done for general improvement, much that will redound to the health as well as the happiness of mankind, much in which members of the medical profession must be, as they have been in the past, leaders. Nothing is so inspiring as to find how much good has

been accomplished by what has been done already. Hence we welcome as especially opportune this successful attempt of our New York contemporary to demonstrate by actual statements of fact that the talk of degeneracy is idle and empty complaining, while the world's willing workers are accomplishing great things.

MEDICAL GRAFT.

THE Physicians' Club of Chicago recently devoted a whole evening to the discussion of professional graft, without arriving at a satisfactory definition of the word; but Dr. Enricus Cordus, who published a very keen and clever little paper on "Medical Graft" in the June number of *The World To-Day*, defines graft,—political, medical, legal, etc.,—as "unearned pay obtained for real or fancied service." He then outlines some of the opportunities offered to physicians to obtain money from an ignorant public.

The temptation to perform unnecessary operations, and to make superfluous visits, is often offered by the patient's own anxiety and credulity, and it is small wonder if some of the younger men yield to the easy method of increasing their income and become repeaters and alarmists. The size of the fee has no relation to graft. A wealthy man is quite as willing to pay a large round sum for expert care in saving his life, as he is for the legal advice that saves his property, but the physician who demands cash payment of a sum that is out of all proportion to his patient's means, before he will come to look at the case, is a grafter of the meanest order, whom his brothers send to Coventry along with those who extort hush money, and threaten blackmail to the indiscreet patients who have been in their care.

But as a rule, Dr. Cordus says, he finds that out and out grafting is left to quacks. Personally, he says he has known during thirty years, only three medical men to whom he could honestly apply the word grafter. One of them left the profession and became a gambler; the second committed suicide while in jail, and the third, who ought to be serving a life sentence in a penitentiary, occupied a position on the staff of a temperance hospital.

There is a distinct tendency toward commercial graft that is fostered not by the physician himself, but by the promoters of mineral waters, commission-giving drug stores, or proprietary firms, who offer the physician stock, or a percentage for the sake of his exclusive patronage; but few such cases ever amount to anything, and as the initiative always comes from the outside, it is hardly fair to blame the physician if he occasionally falls prey to the promoter.

Dr. Cordus discusses the question of so-called hospital graft, with the very just conclusion, that it is the public that is the grafter. "No other profession," he says, "is as absurdly altruistic as physicians, in this matter of hospitals. They give their time and services to institutions that could not possibly exist without them, but have no voice in their management, and if by any chance their attitude becomes business-like instead of charitable, it is hinted that their motives are mercenary and unethical. There must be on this matter as well as in the matter of dispensary practice a radical change within a few years, or the grafting public will hold the ethics of the profession in derision."

The conclusion of the article places the medical profession justly, we feel, among the most honorable of all professions. Oliver Wendell Holmes, when asked why physicians did such things as have been suggested, replied that he never knew one to do so. "Once," he said, "I looked up such a report, and found that the man was a quack. Physicians never do such things."

"In the face of limited income, perpetual demand for charity, and innumerable opportunities for graft, the American physician is, as a rule, the graftee, and not the grafter."

ECHOES AND NEWS.

NEW YORK.

Appointment of Dr. Pryor.—Dr. William R. Pryor Professor of Gynecology at the New York Polyclinic Hospital, has been appointed Attending Gynecologist to St. Vincent's Hospital.

The P. & S. and Hospital Appointments.—The pre-eminent position of the P. & S. in the matter of hospital appointments is made prominent in this last year's success. Of the graduating class of 174 of 1904, 131 men had obtained hospitals by July 1, 1904.

Hospital for Queens Beaches.—A movement is under way for the establishment of an emergency hospital in the Fifth Ward of Queens Borough, which comprises the summer resorts of Far Rockaway, Edgemere, Arverne, Belle Harbor, and Rockaway Beach. A permanent organization has been organized to push the project toward a reality.

St. Elizabeth's Hospital.—The new St. Elizabeth's Hospital will be completed in September. The new building is situated on the north side of Fifty-first Street between Ninth and Tenth Avenues. It consists of five stories and basement, and will be divided into thirty-five private rooms and two wards, these having from fifteen to twenty beds each. The hospital admits women and children. The old building is still situated on Thirty-second Street, on the site of the new Pennsylvania station, it being the only structure left.

This Year's Charitable Appropriations in New York.—"The amount of appropriations made this year for new buildings, repairs and improvements at the New York State charitable institutions is somewhat

disappointing," writes *Charities*. "The appropriation bills, as passed by the legislature, made a fairly satisfactory provision for the wards of the State, but before these bills became law the appropriations which they carried were reduced over 30 per cent. by the Governor's veto of some fifteen of their items. The figures are given for brevity and for convenience of reference in the following table:

	Amount of Items Provided for in Appropriation Bills.	Amount of Items Vetoed by Governor.	Amount of Items Approved by Governor.
State Industrial School, Rochester	$185,000	.....	$185,000
House of Refuge for Women, Hudson	9,900	$7,500	2,400
Western House of Refuge, Albion	17,000	12,000	5,000
New York State Reformatory for Women, Bedford	59,750	43,000	16,750
Society for the Reformation of Juvenile Delinquents in the City of New York	4,000	.....	4,000
Syracuse State Institution for Feebleminded Children	4,500	.....	4,500
State Custodial Asylum for Feebleminded Women, Newark	46,600	41,000	5,600
Rome State Custodial Asylum	96,150	42,500	53,650
Craig Colony, Sonyea	42,250	28,950	13,300
New York State Soldiers and Sailors' Home, Bath	28,090	.....	28,090
New York State Woman's Relief Corps Home, Oxford	5,150	3,000	2,150
Thomas Asylum for Orphan and Destitute Indian Children, Iroquois	16,000	.....	16,100
New York State School for the Blind, Batavia	34,930	1,500	33,430
New York State Hospital for the Care of Crippled and Deformed Children, Tarrytown	.....	.....	.....
New York State Hospital for the Treatment of Incipient Pulmonary Tuberculosis, Raybrook	7,350	.....	7,350
	$556,770	$179,450	$377,320

The largest of the items vetoed was $40,000 for an employees' cottage to accommodate 100 at Rome, $38,000 for two cottages for inmates at Bedford, $28,000 for a cottage for inmates at Newark, and $22,950 for the enlargement of the central heating and power plant at Craig Colony. It is estimated by the fiscal supervisor of State Charities that the last named improvement would save the State from $4,000 to $5,000 a year, and in the interests of the taxpayers it seems unfortunate that such an appropriation should be deferred. The veto of the appropriations for new buildings for inmates, or for employees, who would vacate space in residence buildings which could be used for inmates, at the institution for defectives, are particularly to be regretted, as there are large numbers of defectives now unsuitably cared for in almshouses and homes. The Reformatory for Women at Bedford has already passed the limit of comfortable capacity and is equally in need of expansion, especially in view of the fact that a new law adds eleven new counties to the district from which it draws its inmates. The Governor's reason for vetoing most of the items, this year as last year, seems to be that in his opinion the necessity for them is not immediate. Delay in making necessary repairs and providing necessary buildings seldom results in a saving to the State, however, for repairs neglected cost more in the long run, and the postponement of needed new accommodations subjects the institutions to inconvenience and leaves society without the protection which it ought to have against the increase of the defective and the delinquent classes. Most of the appropriations which are made this year were asked for last year and refused, and it is probable that the appropriations which have been refused this year will have to be allowed next year. The amount of the items vetoed, therefore, does not represent a saving but a deferring of expenditure.

New York State Tuberculosis Hospital.—This State institution at Raybrook, N. Y., opened on July 1, with accommodations for about fifty patients. A camp of tents has accommodations for forty-four. To patients who can afford to pay for treatment, a charge is made of the actual cost of maintenance. Only patients with incipient tuberculosis are admitted. The examiners in this city are: Dr. Hermann M. Biggs, 5 West Fifty-eighth Street; Dr. Egbert Le Fevre, 52 West Fifty-sixth Street; Dr. George F. Laidlaw, 58 West Fifty-third Street, and Dr. W. H. Vandenburg, 32 West Forty-ninth Street. The institution may be reached by the New York Central or the Delaware & Hudson railroads. Dr. John H. Pryor, formerly of Buffalo, is superintendent of the hospital.

Plans for the New Manhattan Eye and Ear Hospital.—The Manhattan Eye, Ear, and Throat Hospital, now at Forty-first Street and Park Avenue, is soon to be moved. For many years the accommodations have been insufficient. In the thirty-four years of the hospital's existence the city has grown in population from 950,000 to about 4,000,000, and in area from about 20 square miles to over 300. This great increase has not been met by a proportionate growth on the part of the hospital. The increase in the number of patients from 1,717 in 1869 to 28,479 in 1903, gives an idea of the overtaxed condition. When it became absolutely necessary to meet the requirements for more room, a building committee was formed and ways and means were discussed to the end of acquiring a new site and building. The present property is worth over a half million dollars, and this, combined with the voluntary contributions and other revenues possessed by the institution, constituted a fund sufficient to warrant the acquisition of the nine lots next door to the Baron Hirsch Trades School in East Sixty-third Street. York & Sawyer were selected to design the new building. The capacity of the old building under normal conditions is fifty ward patients and eight private patients. The new institution will accommodate 400 ward patients and about 50 private patients. There will be two buildings; one on the north side in the shape of a horseshoe, so that its wings will be lighted on three sides and receive the sun all day, and the other a lower larger building on the south side for administrative purposes, including rooms for nurses, servants, the superintendent, and the members of the staff. In the north building or hospital proper the entrance floor is to be occupied by the reception rooms and offices, and the floor directly above will be the eye clinic. Above this floor there will be six more stories of wards. Above these will be two floors for private patients, and the next floor will contain the three separate operating rooms for the eye, ear and throat departments. On the top floor will be the pathological and bacteriological laboratories, the kitchen, the dining rooms for nurses, and other apartments considered necessary in a modern hospital. Each physician is allowed to send his poor patients to the institution, but he himself must prescribe for them and he alone is responsible for their welfare. These patients must pay for their treatment if their doctor thinks they can do so, thus preventing any abuse of the hospital privileges. The private patients occupy separate rooms, for which they pay; and they are taken care of by their own physician. No one is refused admittance except in rare cases when the patient can but will not pay the small fee charged. The hospital has a post-graduate department, where any physician in possession of a degree may take a course which lasts about three months, and in this way become thoroughly familiar with new

phases of surgery exemplified in the various departments comprised by the hospital.

Manhattan Dermatological Society.—Regular monthly meeting held on Friday evening, June 4, 1904, at the residence of Dr. R. Abrahams, with Dr. I. P. Oberndorfer presiding. The following cases were presented:

Dr. L. Weiss showed two cases; one a young girl with a sluggish granulating ulcer on right cheek; of several months' duration and exceedingly rebellious to treatment in the beginning, but later on doing well under creosote salicyl plaster; presented as a scrofuloderma. Case II. was one of erythema iris, in a young girl of fourteen years; lesions present on upper right and left arms, upper right and left thighs, and one on abdomen; the lesions were markedly symmetrical, diagnosis concurred in.

Dr. E. L. Cocks exhibited a boy with palmar psoriasis; the question of differentiating chronic eczema, or possibly syphilis, was answered by the presence of guttate typical psoriatic lesions on other parts of the body. Diagnosis accepted.

Dr. Gottheil showed a well-marked case of leucoderma in an elderly male patient; these patches were absolutely white and blanched, in marked contrast to the deeply pigmented areas of surrounding skin; the latter was so extensive and deeply pigmented as to raise the question whether a new deposit of pigment was coincidently going on with disappearing pigment in other areas. Dr. Gottheil inclined to accept this view. Dr. Gottheil also showed an elderly male with a large fungating, granulating mass on right wrist, which he termed fungating epithelioma; of many months' duration and slowly increasing.

Dr. I. P. Oberndorfer presented the patient who was shown at the May meeting; at that time Dr. Oberndorfer made a provisional diagnosis of morphea; the lesion on the chin showed marked induration. Dr. Oberndorfer reports that under K.I. treatment the condition is considerably improved.

Dr. Geyser showed two cases. The first was shown to illustrate the beneficial effects resulting from high frequency currents in the treatment of acne indurata of the face; this patient's condition improved wonderfully, so that no lesions are now apparent, and there being no recurrence within the last four months; patient was seen at a previous meeting.

The second patient, a girl of eleven years, after exposure, developed typical vesicles, blebs, redness and itching, characteristic of dermatitis venenata, on both hands, dorsal surface; eruption faded away in the fall; the following spring a somewhat similar outbreak occurred; this without exposure, to remain all summer and again fade away in the fall. A third outbreak occurred the following spring (this year). Some signs are now present, consisting of an eczematous condition. Drs. Cocks and Gottheil can recognize only an eczematous condition present; it may have been a dermatitis venenata originally, with recurrent attacks of diminishing severity; subsequent attacks not necessarily due to new exposure. Dr. Oberndorfer diagnosed recurrent dermatitis venenata; the second attack, unlike the first one, needed no direct exposure.

Dr. R. Abrahams presented a mother and her eleven-weeks-old infant, both subjects of syphilis; he believes the mother's acquired and the infant's hereditary; the mother shows squamous lesions on palms and soles, and some on shins. The mother states she noticed a swelling on labium and in the groins six weeks after her last confinement One week ago child's body showed a typical roseola. Husband states he had a chancre, but many years ago; no recent lesion. The question Dr. Abrahams asked, Did the child infect the mother? or was the mother long syphilitic? Dr. Ochs believes the child's syphilis is hereditary; the lesion on the mother's labium was probably a late secondary lesion; the mother having had syphilis for some time. Dr. Sobel expected to find lesions on the child (if congenital) much sooner than ten weeks after birth. Dr. Gottheil argues with Dr. Ochs; infection of the mother is probably of one or two years' duration. Dr. Oberndorfer said history was incompatible with congenital syphilis.

Dr. Abrahams then showed a woman aged thirty-five years; history of long standing bronchitis, headaches, general malarial and gradual weakness, and loss of flesh; patient is poorly nourished; the father died of diabetes and a brother of tuberculosis. Ten months ago the skin began to get dark, on exposed surfaces especially. A provisional diagnosis of Addison's disease was made. Dr. Gottheil did not coincide in this view; he believes the pigmentation due to continual exposure and on the body to the existence of a chronic eczema and continual scratching; the latter still quite evident. Dr. Sobel takes exception to diagnosis of Addison's disease; the mucous membranes are not involved; history of diabetes in the father and beginning symptoms of diabetes in the patient, such as throat, polyuria and loss of weight, make him think of the condition known as bronzed diabetes. Dr. Wainwright was of the same opinion; history was suspicious of diabetes. Dr. L. Weiss considers but two conditions: (1) pigmentation due to exposure; to long continued scratching on body and (2) patient's history favors diagnosis of bronzed diabetes. Dr. Oberndorfer was inclined to agree with Dr. Abrahams in calling it Addison's disease.

Dr. Abrahams also presented a case of dermatitis exfoliativa with alopecia capitis; the latter he considers a rare combination. Dr. Gottheil believes the two conditions to be distinct and have no connection.

Dr. B. F. Ochs presented the following cases: (1) A male; six years ago a row of hard papules showed on the face; they assumed a crescentic outline and the patches assumed the size of a silver dollar; the patches were symmetrical; one on each side of face near the lobe of the ear; never got well; the center of patch is hyperemic and the margins, consisting of hard papules, are distinctly raised and hard to the touch. Dr. Gottheil considered it lues. Dr. Cocks entertained leprosy. Dr. Oberndorfer said symmetrical grouping favored diagnosis of lues. (2) A male with gumma of the tongue; a hard, globular mass on dorsum of tongue; present about two weeks and is beginning to ulcerate. The scrotum shows old striation and patient states at this site he had a sore (chancre) four years ago, which was cauterized and which healed rapidly. (3) An interesting case of syphilis in husband and wife; the husband had his chancre six weeks ago on the penis, followed by inguinal adenitis and roseola; evidence still present; the wife shows axillary, epitrochlear and cervical adenitis, and a chancre on left tonsil; mode of infection not determined.

PHILADELPHIA.

Sentenced for Malpractice.—One of the results of the coroner's recent crusade against malpractitioners has been the conviction of Dr. G. A. Appel, of Germantown, who was sentenced by Judge Davis to two years in the penitentiary. Two other indictments against him were dropped.

Free Maternity Incident Closed.—The Free Maternity Hospital Service of Philadelphia which two years ago scattered some 15,000 contribution boxes throughout the State, has been ended by the acceptance of the receiver's report. The society was originally re-

fused a charter because its expenses were out of proportion to the work accomplished. The funds in the boxes will only cover the cost of litigation.

First Conviction of Illegal Practitioner.—The first conviction under the recent activity of the State Board of Medical Examiners is that of Thomas E. Eldridge, who has been fined $200 for practising medicine illegally. The maximum penalty is $500. Eldridge possessed a diploma given him by the Eastern College of Therapeutics and Psychologic Medicine of Philadelphia, but no such institution is recognized by the board. Eldridge employed electricity and the X-rays and also essayed the giving of drugs which proved his undoing.

Douglass Memorial Hospital.—Plans are being considered to provide new buildings and equipment for this institution, which is conducted for the benefit of the negroes of the city. The entire staff, except the consultants, are colored, and this year a class of five colored nurses was graduated. The work of the hospital has been steadily increasing during the eight years of its existence.

Food Adulteration Prosecutions.—Prosecutions by the State Dairy and Food Commissioner have reached practical results in holding for court 14 milk dealers whose products have been analyzed and found to be adulterated. Warrants for nearly 20 more have been issued. The Bureau of Public Health and Charities is co-operating with the State officials. Many dealers outside of Philadelphia are also involved in the investigation of Commissioner Warren, who is beginning to reap the results of his untiring efforts. In Altoona 30 grocers have been arrested for selling adulterated apple butter, chocolate, cherries, and maple syrup. Definite steps have been taken toward fitting up a chemical laboratory in connection with the Commissioner's office at Harrisburg.

CHICAGO.

Commencement Exercises of Dearborn Medical College.—This college graduated its first class June 30, at which time degrees were conferred on fifteen men and three women. The degrees were conferred by the President of the College, Dr. L. Blake Baldwin, and the Doctorate Address was delivered by Judge Richard S. Tuthill.

Chicago Hospital.—The Chicago Hospital Building Co. has given a deed of the property to the Chicago Hospital for a consideration of $135,000. The property is located 110 feet east of Cottage Grove Avenue, and has a frontage of 75 feet and a depth of 132 feet. The hospital is located at 452 Forty-ninth Street. The improvement consists of a five story brick building. The transfer was made subject to an incumbrance of $30,000, and the grantee has given a trust deed to the Merchants' Loan and Trust Company to secure an additional loan to John T. Binkley, of $40,000 for five years at 5 per cent.

Investigations of Health Commissioner Reynolds in Regard to Dairy Farms.—The following is a summary of the most important results of the Commissioner's personal investigation of a number of dairy farms in this and adjoining States from which Chicago receives its milk supply:

1. An increasing proportion of Chicago's milk is delivered to the consumer within twelve hours after milking. The bulk of it, however, is from twenty-four to thirty-six hours old before delivery. There is no insuperable reason why it should not all be delivered within the shorter period and every effort of the Department is being made to this end. 2. There is much room for improvement in the conditions of milk production on nearly all the dairy farms visited, except those under the direct supervision of a few large contracting firms. The dairy inspectors of the Department are engaged in visiting this class of farms, explaining to their owners the necessary requirements, reporting upon their conditions, and recommending the exclusion of their product from the Chicago market if, after a reasonable time, they fail to conform to these requirements. 3. It costs more to produce clean milk than dirty milk—therefore, cheap milk is, prima facie, impure and unwholesome milk and the housekeeper who buys it is helping to perpetuate unclean conditions of dairies and helping to swell the death rate of the city, by having her babies die off from diseases caused by poor and impure milk. The consumer should make it an object to the milk producer and the milk dealer to furnish a clean, fresh and wholesome product, by being willing to pay a fair price for such product and by giving personal attention to its quality and proper care after its receipt.

CANADA.

Annual Meeting, Ontario Medical Council.—The annual meeting of the Ontario Medical Council was held during all of last week in the Council Chambers, Toronto, under the Presidency of Dr. J. A. Robertson, of Stratford. Since last session two prominent members have died, viz., Dr. V. H. Moore, Brockville, and Dr. J. H. Sanster, Port Perry, their places having been filled by Dr. Herald, of Kingston, and Dr. Bascom, of Uxbridge. After hearing the annual presidential address, the following officers were elected for the ensuing year: President, Hon. Dr. Sullivan, Kingston; vice-president, Dr. A. A. Macdonald, Toronto; Registrar, Dr. P. A. Pyne, M.P.P.; Treasurer, Dr. H. Wilberforce Aikins; Auditor, Dr. J. C. Paton. A communication was submitted from the Hon. Alfred Lyttleton, Colonial Secretary, referring to the fact of a private member's bill before the British House of Commons, providing that when any part of a British possession was under both a central and a local legislature the King might by order-in-council declare any such part under a local legislature to be a separate British possession. The object of this measure was to enable reciprocal arrangements to be entered into under the Medical Act of 1886 with such provinces of Canada as desired to do so. The Ontario Council thought that Great Britain in this matter would be having the best of any such bargain, and in the absence of more explicit information on the subject laid it over until the next session in 1905. The Council decided to sell their present building and erect new quarters and tenders will be called for without delay. The matriculation standard was raised, 40 per cent. now being the minimum required on each subject and 50 the minimum on the aggregate in Ontario. A prolonged discussion took place on alcohol in patent medicines, and it was resolved to memorialize the Dominion Government on the matter requesting that every such article of manufacture exposed for sale should have the formula printed thereon. Another matter of great importance dealt with was the question of an authorized tariff for the Province. A special committee had had this matter under their attention during the past year with the result that their scheme submitted to Council was endorsed and recommendations made that the legislature be approached and same be legalized. The examination committee reported that at the examinations just held 142 candidates had presented themselves in the final year, of whom 93 passed and 49 failed to qualify. An amendment was adopted to the fifth-year course providing for these students receiving a certificate after having spent a year in a hospital with over fifty beds, or for one year assistant to a doctor, instead of taking the fifth year lectures.

Congress of French Doctors.—The second congress of French-speaking physicians of America was held in Montreal, June 28 to 30, the sessions being held in the Convocation Hall of Laval University. Dr. Pozzi was the official delegate representing the Academie de Medicine de Paris and while in Montreal performed operations in the Notre Dame and Royal Victoria Hospitals.

Appointment.—The provincial government of New Brunswick has appointed Dr. J. V. Anglin, of Montreal, superintendent of the New Brunswick Hospital for the Insane at a salary of $2,500 per annum. Drs. G. A. B. Addy and Travers have been looking after the patients at the hospitals since the resignation of Dr. Geo. Hetherington some months ago.

News Items.—Laval University, Montreal, this year conferred the M.D. degree upon 40 candidates, and 18 received the degree of Bachelor of Medicine.

Dr. R. J. Manion, gold medallist from Trinity University has been appointed to the house staff of the General Protestant Hospital, Ottawa.

Dr. R. Tait McKenzie, head of the practical anatomy department at McGill University has been invited to become medical superintendent of the college gymnasium of the University of Pennsylvania. Dr. McKenzie is at present in Paris, and it is understood that he may possibly accept.

At the coming meeting of the British Medical Association Dr. T. G. Roddick, M.P., of Montreal, and Dr. William Osler, of Baltimore, will have conferred on them by Oxford University the degree of Doctor of Laws, *honoris causa.*

A sanitarium for the treatment of consumptives is to be erected at Kamloops, B. C., and toward the purpose the Canadian Pacific Railway will contribute $5,000.

GENERAL.

Harvard Medical Graduates.—On June 29, the faculty of the Harvard Medical College conferred the degree of Doctor of Medicine upon 130 men.

Harvard's New Buildings.—It is announced, says *Science,* that work on the buildings for the Harvard Medical School has not progressed as rapidly as had been hoped, and that they will probably not be occupied until the autumn of 1906, instead of 1905, as was originally expected.

Yale Medical Graduates.—The *Times* says the graduating class of the Yale Medical School numbered twenty-three. The following were announced at the commencement exercises on June 29: Degree of M.D., *cum laude* to Emanuel Charles Fleischner, New Haven, Conn.; Carlos Grout Hillyard, Saxtons River, Vt.; Julius Harold Rush, Washington, D. C.; Nathan Tolles Pratt, Bridgeport, Conn., and Burton Isaac Tolles, Ansonia, Conn. The Campbell Gold Medal was awarded to Emanuel C. Fleischman with honorable mention to Nathan T. Pratt and the Keese prize of $145 was divided equally between Charles G. Hillyard and Nathan T. Pratt, with honorable mention to Julius H. Hurst.

Warren Prize.—The Warren Triennial Prize of the value of $500, in the gift of the Massachusetts General Hospital, has been awarded to Dr. Max Borst, extraordinary professor of pathological anatomy in the University of Würzburg, for a dissertation entitled "Neue Experimente zur Frage der Regenerationsfähigkeit des Gehirns."

Statue to Dr. William Elias B. Davis.—We learn from the *Alabama Medical Journal* that the memory of Dr. William E. B. Davis, late of Birmingham, Ala., will be appropriately perpetuated by the erection of a monument by the Southern Surgical Gynecological Association, of which Dr. Davis was the originator as well as founder. He not only conceived the idea, but organized the association in all its details and served as its secretary and executive officer for thirteen years. The association does well in thus testifying its appreciation of this distinguished physician, whose memory will live in spite of granite or bronze. The statue will be made by G. Moretti, who was the designer of Vulcan (the Colussus iron man which represents the Birmingham district at the St. Louis Exposition) and will be in bronze, 7½ feet high, standing upon a granite pedestal 9½ feet high. Signor Moretti is now making a marble bust of Dr. Davis in Alabama marble. The plaster caste is a very fine likeness. He has made an indemnity contract to have the statue ready by the first of December next that it may be unveiled at the coming meeting of the Southern Surgical and Gynecological Association.

Tuberculosis Talk at Portland.—It was a curious commentary, writes *Charities,* upon the rapidity with which the organized work for the prevention of tuberculosis has taken form in this country, that though that work is now recognized as an important and even necessary function of charitable activity, it was not accorded any formal hearing at the recent National Conference of Charities and Correction, upon a program arranged not more than twelve months ago. It was soon found, however, that among the delegates to the convention were many connected with organizations for the prevention of tuberculosis in different parts of the country and, as was to be expected, the opportunity to talk was not lost by those of our brethren, the corner-stone of whose work is popular propaganda. An informal meeting was accordingly called together at which the addresses were arranged so that each speaker should deal with one phase of the general work, and that the work which had been particularly noteworthy in his city. Thus, Mr. Glenn, the chairman of the meeting, spoke of the fact that in Maryland the medical profession had been the moving spirit in the movement, not merely giving its approval and support after its initiation by laymen, as had been the case in most other cities. The work of the Maryland Tuberculosis Commission had been largely one of research and education, and it was as a part of this work that the tuberculosis exposition had been held recently in Baltimore.

Christopher Easton, deputy superintendent of the Metropolitan Hospital in New York, gave an interesting account of the treatment at the tuberculosis infirmary. Largely, the infirmary serves its best purpose in segregating from the community dangerous cases, and in furnishing valuable object lessons in the proper treatment of tuberculosis to the patients, the thousands of their visitors and to a public becoming more and more intelligently interested in the infirmary. A unique feature of the work at the infirmary is that the deputy superintendent combines with his executive duties the duties of a social secretary, seeing as much of the patients as is possible and dealing individually with a large body of men whose social needs the physicians must ignore or treat *en masse.* The methods of the New York Department of Health and the work of Dr. Hermann M. Biggs in that department were described by Paul Kennaday of the New York committee. The provision of the sanitary code that "tuberculosis is an infectious, communicable disease, dangerous to the public health," the compulsory reporting of cases, the inspection, medical, nursing, fumigating and bacteriological work, the forcible removal of cases, and the dispensary treatment, were described as the combination which had largely helped to reduce the death-rate over forty-one per cent. in the last twenty-one years.

A. M. Wilson of the Boston Committee spoke of the Rutland Sanatorium. This is the first state sanatorium for tuberculosis. It affords Boston the unique oppor-

tunity of adequate sanatorium facilities for all its incipient cases. The close cooperation between the district nurses, the Board of Health and Associated Charities in Chicago was explained by Ernest P. Bicknell of the Chicago Bureau of Charities, and his mention of the home tent treatment, which has there been successfully attempted in a few cases, brought from Mr. Almy, an acknowledgment that he had very little in the way of anti-tuberculosis work to report from Buffalo, where tenement-house matters had been engaging much of their attention. With short addresses by Miss Birtwell, and Messrs. Baldwin, Solenberger and McClain describing conditions in Cambridge, Washington, Minneapolis and St. Louis, and with mutual assurances of mutual aid on the part of those present. It will be noticed that at the next session of the National Conference at Portland, Ore., there will be a special section devoted to this subject with a recognized place upon the program.

Assistant Surgeon Public Health and Marine Hospital Service.—A board of officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, 3 B Street S.E., Washington, D. C., Monday, October 3, 1904, at 10 o'clock A.M., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. The following is the usual order of the examinations: 1, Physical. 2, Oral. 3, Written. 4, Clinical. In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination of the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and when practicable candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and, after due examination, as vacancies occur in that grade. Assistant surgeons receive $1,600; passed assistant surgeons, $2,000, and surgeons, $2,500 a year. When quarters are not provided, commutation at the rate of $30, $40, and $50 a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, ten per centum in addition to the regular salary for every five years' service up to 40 per cent. after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address, Surgeon-General, Public Health and Marine Hospital Service, Washington, D. C.

OBITUARY.

DR. BRYAN G. WILLIAMS, assistant physician Long Island State Hospital at Kings Park, a graduate of Bellevue Hospital, died at sea, May 13, 1904.

DR. CHARLES S. WOODWARD, of 210 East One Hundred and Sixteenth Street, New York City, died at Glens Falls, N. Y., on Sunday, June 26, 1904, after a lingering illness. The *Times*, in speaking of Dr. Woodward's death, says that he was born in Michigan thirty-five years ago, and came to New York when a boy. He took his medical course in New York City, finishing in 1882, and has since been practising in Harlem. He was a member of the New York Medical Society and the County Society.

CORRESPONDENCE.

OUR LONDON LETTER.

(From Our Special Correspondent.)

LONDON, June 11.

INTERNATIONAL CONGRESS ON HOME RELIEF—THE THERAPEUTIC VALUE OF RADIUM—SURGICAL APPLIANCES LEFT IN OPERATION WOUNDS.

AN International Congress on Home Relief—the fourth of its kind—has been held this week at Edinburgh in the work of which the medical profession took a prominent part. There were five sections which dealt respectively with Children; Old Age; Able-bodied Adults and Sick Adults, and Insane and Epileptics. The opening address was delivered by Lord Balfour of Burleigh, Secretary of State for Scotland, who said that the general object of the Congress was to discuss the methods by which help could best be given to their weaker and less fortunate brethren without relegating them to special institutions where recipients of relief were congregated together. He wished it to be understood that the motive of their meeting was in no way antagonistic to the charitable work carried on in hospitals and similar institutions. The independence of the individual citizen in his own home was the ideal organization of a nation, and any system of public relief ought to interfere as little as possible with that organization. Did he go too far, he asked, when he said that the whole practice of their hospitals, infirmaries, provident dispensaries, friendly societies, etc., and even the work of the private medical practitioner among the humbler classes of the population were in a hopeless state of disorganization? Was it too much to hope that the treatment given by hospitals, if properly organized, could be made supplementary to the treatment of the sick poor by their own friendly society doctor or their own medical adviser, who, inasmuch as he knew the home and habits of his patient, was better qualified to advise than the overworked medical attendant in the out-patient department of a great hospital? He dreaded the direction in which they were tending, and expressed the belief that their hospitals could never obtain enough money to meet the growing demand which the present policy tended to invite. No system for the relief of the poor would ever be satisfactory unless there was full and organized cooperation between voluntary agency and public relief. He concluded by urging them to cherish what there was of healthy home life in the community, as family life was one of the most valuable elements in the social constitution of a nation.

In the Section of Children, Miss M. Horn, school manager under the London School Board, read a paper on "Home Relief in Relation to the Feeding of Infants and School Children," with the view of proving that the feeding of children, from the school as a center, was an essentially bad method of relief, but that many other forms of home relief which tended to induce self-respect and independence on the part of parents could be successfully carried out by capable managers with the cooperation of the teachers. One party advocated free feeding of children by the munic-

ipality, and so ensure, as they argued, that the children were not in a state of hunger when in school and could profit from the lessons taught them. Experience went to prove that where they had carried out energetic and enlightened home visiting, no child need fail to obtain relief if it required it; and secondly, that private charity was sufficient to meet the demand for relief in schools. The demand for help was largely an artificial one, and was created in schools where it was known that relief was likely to be freely given. If charitable committees could be established in every school, to promote hygiene, thrift, apprenticeship, and administer relief if necessary, they should then be nearer an ideal system of home relief in connection with school children, than by any system of aid which attempted to meet obvious needs at the expense of serious deterioration of character.

Dr. H. Wright Thomson, assistant surgeon, Glasgow Royal Infirmary Ophthalmic Institute, read a paper on "Home Relief in Relation to Certain Eye Diseases in Children." Educational methods, he said, had tended to promote shortsightedness or myopia, and means should be taken to minimize this. In childhood it was possible by treatment to affect the future course of myopia by (1) wearing glasses; (2) resting the eyes; (3) improving the general health. City children thus affected might be boarded out in the country, where their condition would improve under better feeding. Another disease of the eyes—strumous ophthalmia—was in a large proportion of cases a direct result of bad feeding. Cleanliness and an abstemious dietary were necessary for its treatment.

The Section of Sick Adults was presided over by Mr. Malcolm Morris, who said it should be clearly understood that the duties to the sick poor were not based entirely on philanthropic sentiment and Christian charity, but were dictated by the law of self-preservation. Invaluable as the work inspired by charity had been in the past, and greater still as they confidently believed it would be in the future, the question was essentially an economic one, and must be dealt with as such if a satisfactory settlement was to be reached. In spite of all that had been done in the past few years for the mitigation of the scourge of consumption, we were still only at the very beginning of the campaign. Sanatoria were springing up all over the country, and municipalities were waking up to the duty incumbent upon them of providing for the consumptive poor. That provision, however, was limited to cases still in the early stage when the disease was curable, while for the advanced cases, which formed a large majority of the whole mass of sickness, there was little or no provision. These cases must necessarily be treated either in consumption hospitals or at home. The consumption hospitals, however, could do comparatively little in the face of the enormous numbers of tuberculous sick. The problem of tuberculosis was, therefore, essentially a question of home treatment. Theoretically, the sanatorium was intended only for what were called incipient cases, but, as a matter of fact, incipient cases were very seldom to be found in these institutions, for the simple reason that they were rarely discovered outside. It was in the home that really incipient cases were to be found, and it was there that they must be looked for and dealt with, either by removal to sanatoria or by such applications of the modern treatment by air, sunlight, and hygiene as might be practicable in the circumstances. As soon as the disease was recognized, the patient should, if possible, be sent to a sanatorium, but at present it was only in an insignificant proportion of cases that that was feasible. They hoped, however, that the day would come when every large town would have a sanatorium of its own for the treatment of the consumptive poor. Compulsory notification of tuberculosis was as necessary in the warfare against the disease as the work of the Intelligence Department was in a campaign, and he thought the legislature should be asked to carry that desirable reform into effect. Dr. R. W. Philip, the pioneer of the open air treatment in Scotland, dealing with the same subject, said a complete organization against pulmonary tuberculosis must include for large cities: (1) A home for dying patients, chiefly in the interest of other persons; (2) a sanatorium or sanatoria for selected patients who, with a view to the care of the disease, require a special regime not procurable in their own homes; (3) colonies for the after-life and supervision of patients in whom the disease has been sufficiently arrested to make selected open-air employment feasible and desirable; (4) a tuberculosis dispensary for the treatment of out-patients which should also be the center of an educational propaganda for the instruction of the public in the means of preventing consumption.

In closing the discussion, Dr. Philip moved the following resolution, which was unanimously carried: "That in the opinion of this Section an organized effort against consumption is required. The Section believes that this will be best effected by the establishment of a properly equipped tuberculosis dispensary, under the direction of the municipality or the local authority."

Professor W. Japp Sinclair, of Manchester, introduced a discussion on "The Means of Home Attendance on Parturient Women in Large Centers." He said it was much to be desired that members of the medical profession should be relieved of certain duties in connection with midwifery cases, without appreciably diminishing their practice and its emoluments. Under the present circumstances there was a constant temptation to hurry through with ill-remunerated cases. Would it not be better for the medical profession to assist in a gradual change in the direction of the custom prevalent in Germany, by which qualified men do not assist cases of labor, except among a class considerably higher socially than those from whom they accept an unmentionably small amount of fee, and to leave the poorer classes of patients to the care of really well-trained midwives? The midwife of the present day must be tolerated as long as she continued to exist and a new order could be established only by the fluxion of time, and by the exercise of such influences as could be legitimately brought to bear in the cause of progress. He had formed the opinion that the best hope of establishing a new order of things with regard to the attendance on parturient and puerperal women must rest upon developments from the public lying-in hospitals which were supported by voluntary contributions. The new order of midwife must belong to a higher class socially than the old, and must be better educated and more highly trained.

In the Section of Insane and Epileptics, Dr. Alexander Robertson, consulting physician, Glasgow District Lunacy Board, read a paper on "The Scottish System of Boarding Out the Insane Poor in Private Dwellings." The special feature of the system was the boarding in the houses of strangers of not more than four harmless insane, those houses having previously been licensed by the Lunacy Board on being satisfied that both houses and guardians were suitable. The Act of 1862 permitted four patients to be in one house; but experience had shown that not more than two was generally the best. The risk with the larger number was the development of a modified asylum—isolation of the insane from the family circle. The kind of guardians which he found most suitable for females were elderly widows with a grown-up daughter at home. For men it was always imperative that there should be a man resident in the

house. For the great body of patients who did not require asylum treatment the boarding-out system was the best.

In discussing the paper, Dr. J. F. Sutherland, Deputy Commissioner-General, Board of Lunacy for Scotland, referred to a Bill introduced into the House of Commons the other day by the Attorney-General, Sir John Batty Tuke and Dr. Farquharson, and others. That Bill *inter alia* was to check the early certification of the insane and all the disadvantages it meant to the individual afflicted, to the families concerned, and to enable the medical attendant to place doubtful or temporary cases in private homes and in observation wards without the need of certification. If this Bill became law there would be fewer certifications and fewer inmates of institutions and more relegated to home care.

Dr. J. M. H. MacLeod, of Charing Cross Hospital, is a very shrewd and honest observer, qualities that make his statements as to the results of treatment more trustworthy than those of many who report on the effects of new remedies. He has tried radium bromide in a number of cases of lupus vulgaris, lupus erythematosus, rodent ulcer and epithelioma, and his experience has led him to the conclusion that the chief utility of the agent is in the treatment of rodent ulcer. In the case of small ulcers it acts "almost like a charm," but in those even of moderate size the treatment by X-rays is more practical. In some cases, however, in which the rays seem to lose their power, they may with advantage be supplemented by radium. In regard to epithelioma his experience is disappointing. He is inclined to regard the agent as of little value in malignant disease and urges the necessity of immediate excision, and the postponement of treatment by the various radiation till after operation. In lupus vulgaris radium is a useful adjuvant to the Finsen light and X-rays, but in lupus erythematosus it is of no use. These conclusions substantially coincide with those of Dr. John Macintyre, of Glasgow, another level-headed and honest observer. Yet a few weeks ago, one of our leading chemists, Sir William Ramsay, told a lay audience at the Authors' Club that radium is "an infallible cure" for lupus. When scientific luminaries talk nonsense of this kind, is it surprising that the papers are full of the miraculous effects of radium in all manner of diseases? One feels inclined to say of Ramsay, as Hamlet says of Polonius: "Let the doors be shut upon him; that he may play the fool nowhere but in 's own house."

Only the other day the name of Mr. Stephen Paget, a son of Sir James, came somewhat unpleasantly before the public at an inquest on the body of a woman who had died after an abdominal operation performed by him. A second operation became necessary and it was found that a pair of forceps had been left behind at the first one. The case was made the most of by the newspapers that deal in cheap sensation, and the surgeon's misadventure made the Philistine—in the person of Stephen Coleridge, the antivivisection agitator, with whom Paget has had a good deal of controversy—rejoice exceedingly. Last week an action for malpraxis brought against a lady doctor, Miss May Thorne, was tried and resulted in the lady being mulcted in damages. In this case, too, the patient was a woman, in whose body a sponge was left after an abdominal operation. These cases have exercised the public mind a good deal. In the first case the accident seems to have been due to a faulty method of checking the number of forceps used, and in the other to the remissness of the nurse whose business it was to count the sponges. At nearly all the London hospitals there is a double check system, the instruments being counted by the surgeon and an assistant or nurse before the operation and again immediately afterward. It has been suggested that such accidents offer a field for a new development of insurance, which would enable patients to insure against the risks of surgical operations, and surgeons against damages for accidents which may happen to the most skilful.

SOCIETY PROCEEDINGS.

AMERICAN SURGICAL ASSOCIATION.

Twenty-fifth Annual Meeting, held at St. Louis, Mo., June 14, 15 and 16, 1904.

(Continued from Page 38.)

SECOND DAY—JUNE 15TH (*Continued*).

New Aids in Diagnosis of Surgical Diseases of the Kidney and their Value.—Dr. A. T. Cabot, of Boston, said that no very startling new devices had been inaugurated during the past year. One method had been suggested, however, for obtaining the urine from one kidney without the use of the segregator or ureteral catheter. It consists in washing out the bladder and then massaging the kidney to be tested for several minutes. This somewhat crude method serves an admirable purpose, so far as it goes, the urine probably being expressed from the kidney and pelvis by the handling. The fundamental difficulty in obtaining guiding information from any form of single organ examination lies in the fact that in health there are wide variations in the secretions of the two kidneys. This makes such tests of little value unless they are carried on over a long period of time. He concluded that segregation is of value in determining the presence of diseased kidneys, but that the question of functional power of the two organs should not be carried too far.

Dr. A. D. Bevan, of Chicago, said that there were two points of very special interest in determining the diagnosis of renal disease. He had recently supervised over three hundred cryoscopic examinations and had determined, first, that this method of diagnosis is of absolutely no value whatsoever when applied to the urine, but of very great worth when applied to the blood of suspected cases. The variation in the freezing point of the blood is a very constant factor. The important further deduction from his observations is that anemia varies the freezing point inversely, as does renal disease, and it is the relation between these two factors which must be studied out and applied before cryoscopy can be made available as an important diagnostic aid. X-ray in renal work is at present with the least doubt *the* most important diagnostic aid; practically 100 per cent. of correct versions being returned by it.

A Case of Acute Pancreatitis Associated with Gall-stones.—Dr. James Bell, of Montreal, described the history of this patient, a physician, upon whom he had operated and subsequently reoperated, to remove a stone in the ampulla of Vater, which was occluding the common duct. At the time of the primary operation, which was for acute pancreatitis, the liver and gall-ducts were grossly, at all events, in normal condition. All signs of the trouble disappeared; the patient was well for two years, then he began to show signs of hepatic trouble. The pancreatitis in this case was the first to develop. The final results were admirable.

Treatment of Cleft Palate.—Dr. Truman W. Brophy, of Chicago, made a strong plea for operation in early infancy. He said that the generally ac-

cepted theory that the lip should be united early and the bone left until late was, in his opinion, a great error. He gave a most instructive lantern-slide demonstration the point of which was to show that in cases of cleft palate the parts are not deficient in bone formation. As shown, the point became clear that these children present an abnormal widening of the superior maxillary arch; that the inferior teeth germs close on each side within the upper circle and that the crowding together of the parts in very early infancy can but serve to place the gums in normal relation with each other. The shock of an early operation may justly be considered to be less than a late one, for the reason that the infant's nervous system is less developed than the child's. The bone should always be moved or bent without fracture and to this end it is necessary that the work be done within the first six months of life. It has been shown conclusively that the constant impact of the wedge-like lower jaw drowe asunder the already separated upper fragments; this alone was a definite argument for early operation.

Dr. A. H. Ferguson, of Chicago, said that while he agreed with Dr. Brophy in that operation should be done at an early age, he believed that infants bear the shock of a major operation badly and for that reason the old plastic methods should be employed, so modified as to move a small rather than a great mass of bone to close the defect.

Dr. George Tully Vaughan, of Washington, said that he believed Dr. Brophy's operation to be founded on fundamentally correct principles and that its author had conferred a great benefit upon mankind.

Dr. Brophy in closing, said that he considered the lateral incisions unnecessary and that all such cuts were open to the serious objection that they too frequently destroyed the continuity of the tensor-palati muscle, thus giving a clumsy palate, often associated with defective hearing. His mortality in over 300 cases had been below three per cent.

The Evolution of Surgery.—Dr. J. E. Mears, of Philadelphia, spoke of the development of surgery from the earliest days to the present epoch. He said that, broadly, the subject was divisible into three great epochs: the first extending from the unknown past to Ambrose Paré: 1517-1590. This period was terminated by the introduction by this most remarkable way of the ligature for hemostasis. The second period ended by the introduction of ether at the hands of J. C. Warren, while the third and greatest was marked by the discovery and adaptation of antiseptics by Lister; 1860-1875. He cited the oft-forgotten fact that a great deal of very good surgery was done by men who lived and practised centuries before Paré. He alluded to the ingenious devices for and methods of teaching along the time-honored paths: wind, phlegm, bile, etc. Among the Hindus the practice was not differentiated to any wide extent, the priests practising surgery or medicine with equal freedom. The tombs of the Egyptians portray the development of the healing art in that wonderful country with clearness and precision. The Greeks being essentially warlike, turned early to find means for healing the wounds of war, but as no dissection of the dead was allowed, progress naturally was exceedingly slow or, indeed, it may be said to have been nil. With the development of the Alexandrian school, however, and the advent of Herophilus, the art developed rapidly into the most astute of sciences. Due entirely to the limitations put upon them by their religion and not to any fundamental lack, the Arabians contributed but little to the development of medicine and surgery, but helped in a very general way in preserving for western civilization the knowledge which had been brought to such a stage of perfection at Alexandria. Ambrose Paré began as a barber-surgeon's assistant, but worked on and on until he published some of the most monumental works in all medicine. The idol of the army, particularly of the rank and file, he was obliged to special finding of the court to justify the use of the ligature by reference to ancient authorities. The influence on the development of surgery of military power cannot be estimated. This can be traced well in the warlike State of Prussia where, until a very recent date, the surgeons were obliged to shave the officers,—a sorry position for one who shouldered such responsibilities as the regimental surgeon. Lister's work transcends all others, for the reason that before the days of chloroform and ether, in the times of Homer and earlier, certain forms of anesthesia were by no means unknown. Mandrake and hyssop were used to solace suffering centuries before Christ. For this reason it can truthfully be said that anesthetics—inestimable boon that they are—stand second to antiseptics. Like all else, the modern practitioner is the product of evolution; from the ear-borer and blood-letter of Paré; from the regimental surgeon of Lister, has developed the finished surgeon of to-day.

Professor S. Pozzi, of Paris, spoke by invitation on the relation of the old Parisian hospitals to the development of surgery. He said that the old Hôtel-Dieu was, of course, the representative of all that is old and venerable in medicine. It was destroyed by fire some forty years ago and most unhappily was rebuilt on the old Roman lines. Now the tendency in France was to erect hospital buildings of a more temporary character. He paid a graceful tribute to the American system of ventilation and stated that he had introduced it in his new Hôpital Broca.

A Mechanical Device for Gastric and Intestinal Anastomosis.—Dr. F. B. Harrington, of Boston, showed his well-known segmented ring which has proved so useful in exploiting this work. The segments are of aluminum, so collared that they brace against each other and thus maintain a circular form when tied together with a bit of catgut. A handle of convenient length passes through the ring to be screwed fast in the inner circle after passing through a segment diagonally opposite. This handle serves admirably to hold and steady the parts during introduction. The ring, as usually made, is seven-eighths of an inch in diameter and breaks up into segments of hardened aluminum, each weighing ten grains. The handle is of steel. At the end of twenty-four hours the ring is held in place more securely than at the time of its introduction on account of swelling. The author showed a set of chamois-skin models of the button *in situ*—a method of invaluable aid in teaching students the various technics. In shape the ring is not unlike Mayo-Robson's bobbin and its manner of introduction is similiar. In conclusion the speaker said that the advantages of the segmented ring lay in its safety, in the ease and speed of its introduction and in its cleanliness. It can be made by any manufacturer, quite unlike the Murphy button, not being dependent for its safety upon a delicate system of springs. It cannot fail to collapse as it is held together by a frail and absorbable strand of catgut. It affords protection to weak spots, specially at the mesentery until danger of leakage has passed. Histological specimens show

that the process of repair during use of this button is just as satisfactory as occurs after suture.

Dr. J. W. Draper Maury showed models of a "Twine Triangular Stitch," such as is employed at the Surgical Laboratory of Columbia, in making experimental gastro and entero-enterostomies. He presented a specimen and demonstrated the method of introducing the twine from a chart. Twine, he said, had recently been substituted at the laboratory for the McGraw ligature and had been shown conclusively to cut through as surely and at about the same rate as the elastic. He said that by using a triangular form of stitch control could be had over the size of the area punched out. In the case of the McGraw stitch a simple linear cut is made.

Dr. A. J. Ochsner said that he shared with most other surgeons the objection to the use of any mechanical contrivance to facilitate the connection of two hollow viscera, but as a matter of fact he believed that their employment was a safeguard to the patient and was therefore to be encouraged. He had long since become convinced that the Murphy button was open to most serious objection. In his last 87 cases he had had recourse to the elastic ligature and had had better success with it than with any other form of technic. In reference to the new button of Dr. Harrington, he said that in its employment he saw the very distinct advantage, viz., that it is sure to have a patent lumen.

Dr. Harrington, in closing, spoke of the action of the muscular waves of the stomach carrying as they had been seen to do, the fragments of his button toward and into the open pylorus.

Results with the Use of Radium.—Dr. Robert Abbe demonstrated a very powerful specimen of this element and presented a complete series of casts, photographs and radiograms which demonstrated the experiments he had been carrying on. He showed among other things the results of his experiments on the effect of exposure to radium rays plant life growth is markedly retarded. In like manner exposure to radium interferes with normal development of worms. Under the rays the worm lives, but remains a worm.

Therapeutic Value.—On small superficial epitheliomata the rays work well. They destroy, not as a cautery, but by some unknown subtle power. This power is a factor to be reckoned with, but as it is ten times more efficient than the Finsen light so as the X-ray tenfold the worth of the radium ray.

Dr. W. W. Keen, of Philadelphia, in discussing this paper said that he had employed radium in 22 cases, and that not in a single one was there any appreciable result save that the pain was stayed. He had temporarily relieved a case of tic douloureux. Possibly it was the type (German) of radium he used, but its strength had been reported to be 1,200,000.

Dr. Abbe, in closing, said that he never had intended to suggest the matching of radium against the X-ray. He reported what he did simply for scientific and pathological interest.

Gastrostomy for Esophageal Stricture.—Dr. James H. Dunn, of Minneapolis, said that Dunham's device of string swallowing enables the operator to pass almost any stricture. Retrograde dilatation is not to be condemned, however. Its employment dates from the early days of Loreta's work. The operation is usually done in two stages because, as is well known, strictures soften from rest. The author considered Abbe's method combined with Dunham's as the safest and best. Dilatation should always be carried far beyond the normal size—the common instruments of the shops having no value because of their small size. He reported the results in three interesting cases.

Dr. Abbe said that even with Dunham's admirable device the combination of methods as suggested by Dr. Dunn seemed to him too complicated. The essential of the string operation is that the stricture must be put on tension, otherwise the twine will not cut. His first case, operated on twelve years ago, has had no recurrence, being to-day alive and well.

Dr. Dunn, in closing, said that he believed the indications for retrograde dilatation to be, first, when no filiform could be passed; second, in all difficult strictures which cannot be treated except by much difficulty from above. Many people have died as a result of ill-fated attempts to pass a dilator from above.

Removal of Upper Jaw for Osteosarcoma.—Dr. S. J. Mixter, of Boston, exhibited the photographs and radiograms of a case which was truly of amazing characteristics. The patient was a man who for the past six years had been confined in an attic room unable to venture abroad because of the frightful looks and nauseating odor of his whole face. The mouth was crowded into the neck—one eye was entirely destroyed by the growth. Its removal constituted a surgical triumph the like of which can seldom be seen.

A Contribution to the Surgery of Nerves.—Dr. Charles A. Powers, of Denver, said that his paper represented a none too satisfactory effort to bring the subject of nerve surgery up to date. Probably the very nature of the lesion and its after history, coupled with the fact that many papers had been written by Europeans and published in little known journals. In all he had been able to collect and study 56 cases. The bridging of defects by catgut and tubularization have both been shown to be equally faulty. In conclusion he said that it was hard to say what should be done; neuroplasty, bone resection or implantation are always at hand, transplantation should be abandoned and prognosis in every case should be most guarded.

Final Result in Secondary Suture of Nerves.—Dr. Emmet Rixford, of San Francisco, reported three cases which he had sutured six, four and two years ago, respectively. Ten weeks after severance of the ulnar he had sutured that nerve and in a year the functional result was perfect. The second case was that of a musculospiral paralysis also eight weeks after the primary injury. So much retraction had taken place that he was obliged to shorten the humerus. In six months function began and from that time on its return was wonderfully rapid. The third case was also sutured eight weeks after the primary injury. It was the facial and much of the mastoid had to be cut away before the ends could be found. Secondary suture differs from primary by being very much more complex, but its success, when accomplished, demonstrates that degeneration takes place whether primary suture has been done or not. He concluded that secondary suture is but little inferior to primary. A reasonable delay should not discourage from making an attempt to reunite the cut nerve, but in the case of a suppurating wound this should not be attempted until all signs of infection have passed, pus having a most deleterious action upon function restoration.

Dr. Willard said that, as in the case of bone transplantation so with nerves, a very young animal

should be used. Decalcified bone tunnels seem to guide the outgrowing nerves.

Dr. Powers, in closing, said that he recalled the case of a negro upon whom he had sutured the musculospiral. A very large keloid, which involved the nerve developed, necessitating reoperation. The result was perfect and continues so at the end of three years.

Operation for Primary Carcinoma of the Liver.—Dr. Leonard Freeman, of Denver, spoke of the rarity of the condition—the single growing nodule being, of course, the only one suitable for surgical intervention. In his case he had used the gauze strips to prevent hemorrhage and had found them to be satisfactory except when it came to removing them. This was accomplished in the end without difficulty.

Dr. W. W. Keen, of Philadelphia, said that the control of hemorrhage in these cases is the all-important consideration. He considers the cautery to be the most valuable aid at hand; it exposes the big vessels which may then be tied and at the same time destroys the small one.

Dr. L. L. McArthur, of Chicago, spoke of the difficulty of positively saying that a given enlargement was solitary. He had found the Mikulicz sack serviceable in controlling hemorrhage.

Dr. Freeman, in closing, said that in spite of Dr. Keen's good fortune with the cautery he would continue to use the gauze strips.

THIRD DAY—JUNE 16TH.

Thyriodectomy .for Exophthalmic. Goiter.—Dr. Charles H. Mayo, of Rochester, Minn., said that over 1,400 books and monograms had been written on this subject, particularly upon its bearing on the question of internal secretion. Tachycardia he has come to consider the one cardinal symptom of the disease, but it may not appear until late in the course of the trouble. In the treatment of the condition the internist and the surgeon are drifting apart. Few cases are operated on until after they have submitted to years of unsuccessful medication. The opposing action of the thyroid and the suprarenal glands serve to maintain the equilibrium of the blood pressure. It is therefore not astonishing that the heart should early feel the change. As is well known, the two procedures now in vogue are thyroidectomy and section of the cervical sympathetic. He has used the X-rays in ten cases of goiter and, as should be expected from the known action of the ray on lymphatic tissue, they were much benefited. Of 128 operations on the thyroid, 40 were done for the relief of exophthalmic goiter. For anesthetic he has used cocaine, chloroform and ether, the last being preferable.

Thyroidism.—This symptom is so alarming because of its high fatality he considers due to absorption of wound serum—the area should therefore be as freely drained as possible and full quantities of salt solution should be given to prevent such absorption. Fifty per cent. of the 40 cases were entirely cured by gland resection; 25 per cent. were cured in time; 25 per cent. were improved. Belladonna should be exhibited before operation and no case in extremis should be accepted from the internist.

Dr. Ochsner, of Chicago, said that avoidance of pressure on the gland or rough manipulation of any kind whatsoever was to be avoided. Before attending to this detail he had lost two cases. The general anesthetic is not the cause of death, but it enables the surgeon to be rough—hence its danger.

Dr. Rixford, of San Francisco, said that he had operated on 12 or 14 cases without mortality. He always uses weak cocaine infiltration. One-half of his cases were drained—the remainder did just as well. All showed moderate rise of temperature. He considers thyroidism more common in the so-called primary goiter.

Dr. Mayo, in closing, said that too rough handling is engendered by a small incision; it should be made free.

Primary Splenomegaly; Splenectomy.—Dr. A. F. Jonas, of Omaha, reported a case which was of particular interest, first because of the rarity of the condition and second, because of the leaving in the abdomen one or more of the accessory spleens, five of which were found grouped about the pedicle. This is the twentieth case reported. At time of removal the hypertrophied organ weighed seven and one-half pounds.

Dr. Mixter, in closing the discussion of his case, said that it simply showed what could be done by taking desperate chances and by making use of osteoplastic flaps for the repair of defects.

Gall-stones in the Common Bile Duct.—Dr. S. H. Weeks, of Portland, reviewed the technic of the subject with special reference to diagnosis.

Dr. Richardson said that to his mind the essential of success in gall-bladder surgery lay in free and long-continued drainage. Brilliant results have been obtained by immediate closure, but this offers greater chance for disaster.

Dr. Rudolph Matas, of New Orleans, said that in most cases of fracture of the jaw the temporomaxillary joint need not be immobilized. He demonstrated a new form of intrabuccal splint which was characteristically ingenious. Since most of these fractures occur in adult males it is possible by having the buccal portion made of a malleable metal soft enough to mold, to use a single splint for an entire service. The apparatus he exhibited showed the tooth-marks of many patients on whom it had been used with admirable success. It combines the precision of an interdental plate with freedom from a dentist. The splint is not designed for simple cases which respond to simple conditions, but is meant to meet complicated conditions. It is so easy of application that anyone can apply it. The patient, once the splint is in place, may drink and speak much more freely than with any other form of splint and, what is of at least equal importance, free disinfection of the mouth is possible.

Dr. A. H. Ferguson, of Chicago, showed a patient on whom he had early last March done straight nephrotomy for the relief of chronic interstitial nephritis. The pathological examinations had been most carefully done—the urine showed granular and hyaline cast. Less urine, on catheterization, came from the left organ, so that was chosen for section. The renal pelvis was drained for eight days, and in eighteen days the output of urine had risen from 18 ounces to 60. One very interesting point in this case was the sudden feeling of relief which came to the man immediately after operation.

NEW YORK PATHOLOGICAL SOCIETY.

Stated Meeting, held March 9, 1904.

The President, O. H. Schultze, M.D., in the Chair.

Period of the Greatest Accumulation of Tetanus Toxin in Broth Cultures.—Dr. Cyrus Field read a paper on his experiments on this subject. In preparing toxin for the purpose of immunizing horses to tetanus,

he said that it was important to obtain as strong a toxin as possible, as there was then less volume of bouillon to inject. In preparing toxin for this purpose at the Research Laboratory of the Department of Health, it was the custom to grow the organism for nine or ten days in flasks holding about two liters of bouillon which had had 12 c.c. of normal NaOH solution added to it after having been made neutral to litmus. The bouillon was covered with a thick layer of paraffin about one-half to three-quarters of an inch thick. This sealed it off and gave a practically anaerobic condition. For every liter of bouillon about 20 c.c. of an old tetanus bouillon culture was added before the paraffin had hardened. The strength of this routine toxin was found to vary greatly, one week a $^1/_{1000}$ of a c.c. being the minimum lethal dose, perhaps the next a fiftieth or even a tenth. Thinking that perhaps it was the length of time for which the culture was grown, Dr. Field determined to take a sample of toxin from the flask each day and test its toxicity. For this purpose, alboline, which is a liquid paraffin, was used instead of paraffin to seal off the media. This permitted the introduction of a pipette and the drawing off of any amount of culture without disturbing its anaerobic condition. A sample of the culture was removed each day at the same hour, a portion being titrated to determine the degree of acidity and the rest passed through a Berkefeld filter; a portion of this filtrate was also titrated and the rest was used to make up the various dilutions for injection. Tetanus toxin is such an unstable compound that one has to determine its minimum lethal dose by making all the possible dilutions and injecting them at the same time, as the following instance will show. Having filtered two liters of a culture Dr. Field tested it and found that its minimum lethal dose at that time was $^1/_{500}$ of a c.c. The next day, it being needed for purposes of immunization, it was again tested before being sent to the veterinarian, and at this time the minimum lethal dose was $^1/_{50}$ of a c.c. The titration in all this work was done with a twentieth normal NaOH solution, phenolphthalein being the indicator. The method of determining the minimum lethal dose was as follows: The filtered bouillon was added to sterile water in various dilutions; for instance, on the first day five dilutions were made up, one c.c. of each containing respectively $^1/_{10}$, $^1/_{25}$, $^1/_{50}$, $^1/_{100}$, and $^1/_{250}$ of a c.c. of the bouillon culture. One c.c. of a dilution was injected into the muscles of the hind leg of a three hundred gram guinea-pig. If the pig died in four days with symptoms of tetanus poisoning he was considered to have received a fatal dose of toxin, so that the pig dying from the effect of the highest dilution was considered to indicate the minimal lethal dose of that toxin. As will be seen, it required a large number of guinea-pigs to carry out the testing of a culture in this manner. The acidity of the unfiltered sample was always much higher than that which had been drawn through the Berkefeld filter, Dr. Field's explanation for this being that the bouillon which had not been filtered contained a great amount of sulphureted hydrogen which is one of the gases formed by the tetanus bacillus in its growth. This gas is acid in its reaction. When the bouillon was drawn through the Berkefeld filter it entered a vessel from which most of the air had been exhausted, and therefore any gases which might be held in solution were rapidly drawn out of the bouillon. When this gas is sulphureted hydrogen, giving the bouillon an acid reaction, there was naturally a great lessening in the degree of the acidity after it had passed out. To determine whether or not this explanation would hold, Dr. Field took some water which contained large quantities of sulphureted hydrogen, and determined its degree of acidity. It was found to require 3 c.c. of a twentieth normal NaOH solution to neutralize it. This was passed through a Berkefeld filter into a vessel in which the air had been exhausted, and was allowed to remain there five minutes. It was again withdrawn and its acidity determined. This time only 2.2 c.c. of the same solution were required to neutralize it. Tetanus toxin remained in a vacuum much longer, as a rule, than five minutes, so it would seem that the high acidity in the unfiltered sample was due to the bouillon containing a large quantity of sulphureted hydrogen in solution.

Dr. Field's conclusions drawn from this work were as follows: (1) On the average the best results will be obtained if the culture be grown only six or seven days in the incubator and after filteration be kept in the ice-box. (2) No toxin should be used after fourteen days have elapsed from the date of inoculation. (3) As a rule, the degree of acidity of the unfiltered bouillon varies directly as the amount of toxin formed, but sufficient work has not been done to permit any definite statements.

Dr. Field said that at some future time he intended to test the effect of the toxin before filtration to see if it, too, was affected in any manner by the vacuum, and also to test the power of an old, reduced toxin to neutralize tetanus anitoxin.

Calcified Thrombus of the Inferior Vena Cava.—Dr. George P. Biggs presented this specimen. He said the patient from whom the specimen was obtained was unconscious when admitted to the hospital, and died three days later without giving any history. He was a well-nourished man, an engineer, aged sixty-one years; a native of the United States. At post mortem the immediate cause of death was found to be fracture of the skull with extensive cerebral laceration. The vessels at the base of the brain were very sclerotic. Fibrous puritic adhesions were numerous. Left ventricle of the heart hypertrophied. Valves normal in structure; but there was relative aortic insufficiency. The entire arch of the aorta was uniformly dilated to a diameter of about 5 cm. and its wall very much thickened, measuring 6 to 10 mm. The enlarged arch made moderate pressure on the right auricle, superior vena cava, trachea, and pulmonary artery. Sclerotic changes were marked throughout the aorta and there were numerous areas of calcification. Spleen was normal in size and consistency, but firmly adherent to surrounding organs. Right kidney larger than normal, left slightly smaller than normal; both presenting similar lesions aside from variation in size; viz., moderate chronic nephritis with numerous small cicatrices.

Microscopical examination showed moderate amyloid degeneration of kidneys and spleen. Liver normal in size and general appearance except for a few small cicatrices. The foregoing lesions are mentioned chiefly because of their strikingly syphilitic nature and manifestations.

The nature of the specimen demonstrated by the speaker was not appreciated until after its removal from the body, and changes in the circulation could not be accurately determined. Distinct enlargement was, however, noted, in the azygos, iliac and renal veins.

The inferior vena cava from its beginning up to the level of the renal veins was completely occluded constituting a hard, absolutely rigid column firmly adherent to the aorta. The diameter of the vena cava is one and one-half to one and three-quarters cm. In the center of it is a small, calcareous rod-like portion, one-half to three-quarters cm. in diameter, extending throughout. The balance of the structure is chiefly fibrous tissue, all traces of the thrombus having been replaced thereby. One naturally thinks of the syphilitic character of some of the other organs in connection with the etiology.

Case of Unilateral Thrombosis of Cerebral Veins.—The following condensed record of this case is of interest, partly because of inability to harmonize the symptoms with the lesions. The patient was a male, aged twenty-seven years, a native of Ireland, single, mattress maker. He gave a history of syphilis four years ago. Moderate drinker. Two weeks ago noticed weakness and anorexia. Pain in right axilla; general aching pains. After five days was able to be out. One week before admission had a severe chill followed by fever and pain on right side. Cough with mucopurulent expectoration, later becoming blood-tinged. Signs of consolidation in the lower part of the right upper lobe and apparently in the upper part of the right lower lobe. On the third day after admission he looked septic and it was suspected that there might be some pus in the right pleural cavity. A needle was inserted with negative result. Immediately following this aspiration, the patient became pale, pulse imperceptible, respiration labored. After stimulation, considerably improved. On the same day there is an entry on the chart of slight nystagmus of the left eye. At 5.30 the same afternoon the nurse reported a right-sided convulsion lasting about two minutes. On the following day (the fourth day after entrance to the hospital), another slight right-sided convulsion, lasting about half a minute. On the fourth day of the man's stay in the hospital it was recorded that since the previous afternoon the patient had been unable to move the right arm or the right leg, or left side of the face. The right arm and leg were rigid. Knee-jerks seemed more active on the right than on the left side. Patient semi-comatose. On the morning of the fourth day, it was impossible to make the patient move the left arm or the left leg; the right side of the face was movable. On the fifth day, the left side of the body was only slightly rigid, and the left hand responded to stimulation. On the sixth day, patient moved both arms on irritation. Pulse weak, respiration labored. Died on the seventh day after admission, two weeks after definite chill with pneumonic symptoms. Temperature 104° F. on admission, inclined to become lower, reaching as low as 100° F. the day before he died, rising the night before death to 104° F. Respiration varied from twenty-four to thirty-six. Leucocytes, 13,800. Embolism was thought the probable explanation of the cerebral symptoms.

At autopsy numerous old adhesions were found over the liver, also pleuritic adhesions on both sides. Heart normal, except that the aortic cusps presented a slightly roughened appearance suggesting acute endocarditis, although the lesion was not marked, also a nodular area of thickening of one of the cusps, three mm. in diameter. After the pulmonary vessels of the right lung had been opened very freely with scissors, three small portions of ante-mortem thrombi were found. Their origin could not be determined but they must have been loosely attached in some branch of the pulmonary artery or vein. No other thrombi were found in the lungs. There was considerable bronchopneumonia of the right lung, particularly in the region in which the physical signs had been heard, and also fairly extensive chronic interstitial pneumonitis of the right lung. A small area of obsolete tuberculosis was found in the right apex. In the kidneys there was parenchymatous degeneration with a few hyaline casts in the tubules of the pyramids. The most noticeable lesions after the removal of calvarium and dura were areas of diffuse hemorrhage of the pia over the right hemisphere, adjacent to and extending a distance of about 4 cm. from the great longitudinal fissure. There were no clots of blood. Veins over the right hemisphere were distended and in contrast with those over the left hemisphere. Convolutions on both sides were moderately flattened.

Having in mind the possibility of emboli or thrombi at the base of the brain, very thorough search was made, the vessels being carefully watched as they were severed and after removal of the brain by careful dissection. There was absolutely no trace of thrombi or emboli. The right Sylvian artery did not appear to be especially engorged and there seemed to be nothing especially noticeable about the arterial supply as far as the large vessels on the right side of the brain were concerned. On opening the longitudinal fissure a parietal thrombus was seen loosely attached to the right wall. It was 3 cm. in length and located midway between the anterior and posterior ends of the sinus. The terminal ends of the right cerebral veins emptying into the sinus in the region of thrombosis contained occluding thrombi, one cm. in length. Beyond the thrombi the veins were distended with fluid blood. These thrombi corresponded with areas of hemorrhage noticed in the pia. Parietal thrombi were found in each lateral sinus, also. Apparently nearly all of the right hemisphere above the level of the roof of the lateral ventricle was softened, but much of this must have been the result of pronounced edema as the appearance of the hardened specimen does not bear out the original impression. Softening is limited to the regions of hemorrhage, most of which correspond with hemorrhages in the pia. These areas of cerebral hemorrhage associated with evidences of softening have a curious outline, often following the irregularities of the cerebral surface as a cortical zone 3 to 7 mm. in thickness. Depth of involvement thus depends partly upon the depth of the sulci. These areas of hemorrhage are entirely in the right hemisphere, chiefly near the great longitudinal fissure. They are 1 to 3 cm. in diameter, and the intervening tissue is fairly normal. No evidences of such lesions are seen in the left hemisphere.

The microscopical appearances of the cerebral tissue are very confusing. In the first place there are evidences of a probable syphilitic lesion in the form of hyaline degeneration of some of the vessels. Then there are other vessels in the regions of softening and hemorrhage, which are occluded with thrombi, some of them fibrinous, some rich in leucocytes. In some instances the perivascular spaces are filled and the surrounding tissue infiltrated with small round cells; in other instances there is no infiltration of surrounding tissue. The inflammatory infiltration is a marked feature in many parts of the involved tissue. Hemorrhages are very numerous, at times very closely related to the thrombosed vessels and at other times hemorrhages are found about vessels which show no distinct lesion. In places, chiefly in the sulci, the pia shows slight round cell infiltration and endothelial proliferation. The question naturally had arisen as to the correct explanation of the lesion. Grossly, the only demonstrable interference with circulation was in the cerebral veins where it was very distinct as shown by the engorgement of the veins beyond the thrombi. The arteries, so far as it was possible to trace them by dissection, did not contain thrombi or emboli, and none have been found in the sections. Dr. Biggs wished very much to have some expression of opinion as to the sequence of events and nature of the lesion.

Aneurism of the Aorta.—Dr. Francis C. Wood presented this specimen. He said that as a rule pathological specimens were not interesting on account of their size; but he had an opportunity of removing a large aneurism from a patient which had excited some interest, and he thought the members of the Society might like to see the extent to which such a growth

might develop. It had been removed from a large and powerfully built man, about forty years of age, who had entered St. Luke's Hospital with an aneurism which had already eroded one of the ribs. He had symptoms of aneurism and the history of syphilis which so often goes with it. He was supposed to be in a dangerous condition, so much so that upon asking for an X-ray picture it was said that the man was moribund and could not have the picture taken. He survived this moribund condition, however, for four months, and was a comfortable, cheery member of the hospital wards. As the aneurism grew larger, it did not seem to produce much discomfort. At the time of autopsy, it projected forward four inches from the anterior surface of the right chest. It seemed as if it would burst at any moment. It had eroded the border of the sternum and extended to the axilla. The ribs were eroded from the first to the seventh and were included in the mass. The lung was laterally compressed, and the pleural cavity contained a small amount of blood where the aneurismal sac leaked. There were also small hemorrhages under the muscles of the chest. The heart had remained comparatively small for so large and powerful a man. The opening of the aorta into the aneurism was closed by a clot. The patient had practically undergone a spontaneous cure, as very little blood could be obtained from the aneurismal sac. In a few weeks he might have recovered.

Primary Epithelioma of the Bronchus.—Dr. O. H. Schultze presented specimens from a case that was diagnosed clinically by Dr. I. Adler as Primary Endothelioma of the Lung. He was indebted to Dr. Maurice Packard, who treated the case, for the clinical history. The patient was a male, fifty-four years old; single; cigar-maker; an inveterate smoker. Family history of arteriosclerosis; no evidence of tuberculosis, syphilis, or alcoholism. Two years before he had had a cough which though alleviated by treatment had never entirely left him. There were no night-sweats; no loss of flesh or strength; no hemoptysis at this time; no dyspnea. The cough during the last two years had gradually become worse and about eighteen months before had been accompanied with profuse mucous expectoration. Dyspnea had become very troublesome and he suffered from pain localized in anterior right side of chest and increased on deep breathing. Sputum was examined for tubercle bacilli with negative result. He was sent to the South but as he did not improve he returned. The cough became more distressing and on many occasions a considerable amount of blood, as much as a cupful, was brought up. Even after these hemorrhages he did not lose weight, nor was his temperature higher than normal. There was flatness on percussion over upper and anterior part of right side of the chest and the veins over this region were prominent. Death occured suddenly with profuse hemoptysis.

Autopsy.—The right pleural sac contained about one quart of blood-stained serum. The anterior surface of the right upper lobe was intimately adherent to the costal pleura which was removed with it. Larynx, trachea, bronchi, lungs, heart and vessels were removed together. A firm tumor, 5 by 3 cm., involved the posterior wall of the right bronchus, the bifurcation of the trachea, and the beginning of the left bronchus. The bronchi, especially the right, were partially stenosed and ulcerated. Immediately below this mass a bronchial lymph-node about 1.5 cm. by 3 cm. was found almost completely infiltrated with new growth. The growth extended along the bronchi into the right upper lobe to its anterior and internal surfaces, where the pleura was intimately adherent to the pericardial sac. Dense infiltration of the growth surrounded the pulmonary vein and the superior vena cava. The lumen of the superior vena cava and that of the pulmonary vein presented mere dimples with radiating longitudinal folds of the vessel wall when viewed from the auricles. The lumen of the right pulmonary artery was narrowed to 5 mm. Sections of the growth throughout the lung were firm with the exception of areas of erosion into the bronchi, evidently the source of the hemorrhage. The middle lobe presented firm consolidation of yellowish white color and flat on section. There were scattered small metastases in the pleura and about the bronchi of the right lower lobe which was compressed by the fluid in the pleura, in the pleural surface of the diaphragm and throughout the left lung. A few isolated metastases up to 5 mm. in diameter were found in a "horseshoe" kidney. The microscopical sections presented showed the same structure throughout, variously shaped islands and strands of cells without intercellular substance, imbedded in a stroma of dense fibrous connective tissue. In these islands the outer cells were polygonal with large vesicular deeply staining nucleus and basophilic protoplasm. Towards the center the cells became flatter, stained more distinctly with eosin and their nuclei stained lighter with hemotoxylin. Concentric arrangement of these flattened cells were indistinct in many places. With Weigert's stain granules and plates of keratohyalin were found. In many islands and in the small metastases, the outer cells presented evidences of growth and infiltration of the surrounding tissue while the inner cells showed progressive loss of structure, coagulation necrosis. The ulcerated surface of the tumor in the wall of the bronchus presented a hemorrhagic granulation tissue. Smooth muscle fibers of the wall of the bronchus could be traced through the tumor.

Adrenal Tumor with Metastases.—Dr. Schultze also presented these specimens. The patient from whom the specimens were obtained, a man fifty-two years of age, had died in Gouverneur Hospital forty minutes after admission. He was suffering from intense dyspnea, no pulse could be felt, and he presented signs of edema of the lungs. The immediate cause of death was excessive edema of the lungs, dilatations, and fatty degeneration of the heart, due to secondary pernicious anemia in turn dependent upon malignant new growths. The left adrenal presented a tumor occupying nearly the entire organ which was symmetrically enlarged to four times its normal volume. The right kidney was almost entirely replaced by a large growth, in volume nearly eight times that of the normal organ, only a small portion of the organ being recognizable. The growth extended through the renal vein into the inferior vena cava, distending it to twice its normal size, as far as the liver. The pelvis, ureter and bladder contained blood clots. The lower epiphysis and adjoining portion of the shaft of the right femur was increased in size to four times the volume of the left. Absorption of bone had advanced to such a degree that the mass was easily broken from the rest of the shaft, and sections through the mass were readily made with the knife. Numerous isolated metastases were found in pulmonary pleura and about the bronchi also in the left kidney.

Microscopical slides from all the growths were presented. The structure showed a reticulum of thin-walled capillaries, the spaces occupied by large polygonal cells whose nuclei stained intensely, the protoplasm very faintly. In the adrenal, kidney, and femur, numerous giant cells were found with central, close arrangement of the nuclei, probably produced by agglutination of cells. In the metastasis in the vena cava, the cells were compressed and fusiform and the vascular reticulum was less distinct. The structure corresponded to that

of the adrenal cortex. The tumors have been described in the adrenal as struma adrenalis or suprarenalis in the kidney, and elsewhere as hypernephroma, adrenaloma, or perithelioma. The kidney tumor might have originated from an embryonal adrenal rest.

Intraperitoneal Hemorrhage from Adenocarcinoma of the Liver Secondary to Adenocarcinoma of the Gall-bladder.—Dr. Schultze also presented slides from this case. The patient, a laborer, forty-three years of age, had died suddenly twelve hours after admission to Bellevue Hospital. Dr. Samuel A. Brown had kindly furnished the following clinical notes. The patient had lost thirty-eight pounds during the last three months. One month before admission it was noticed that his eyes were yellow; the condition was progressive with emaciation, weakness, and loss of appetite. Five days before admission he began to have acute pain on the right side over the liver, increased on pressure and on taking a deep breath. Temperature on admission, 101° F.; signs of cardiac insufficiency and acute perihepatitis. While on bed-pan, endeavoring to defecate, he toppled over and died within an hour.

Autopsy.—Two quarts of blood found in the peritoneal cavity. The source of the hemorrhage was found in a laceration of the capsule of the liver communicating with a large hemorrhagic and softened metastasis. The liver was considerably increased in size and filled with numerous large metastases, hemorrhagic and softened. The superior surface of the gall-bladder was intimately adherent to the liver and presented a papillary growth on its mucosa, infiltrating its walls and the liver. The retroperitoneal lymph-nodes about the head of the pancreas, pylorus, and hilus of liver were considerably increased in size, infiltrated by new growth, hemorrhagic and softened. The retroperitoneal connective tissue was infiltrated with blood, pushing the pancreas forward. The entire mass was about the size of a man's hand. The pancreas was normal. Microscopical slides of the primary tumor and metastases were presented. The structure was that of adenocarcinoma with high columnar cells, in places arranged in tubules, in others irregularly infiltrating the surrounding tissue. Extensive necrosis and hemorrhage were apparent.

Dr. Noyes said that three or four years ago he had presented to the Society a large tumor of the liver of adenomatous nature which, when put under the microscope, proved to be nearly identical with suprarenal gland tissue. It had caused some discussion and a marked difference of opinion, some of the members believing it to be simple ordinary adenoma, others believing it to be metastatic deposits of the ordinary cells of the suprarenal gland in other organs; but the speaker thought it identical with the specimen shown by Dr. Schultze. It was one very large tumor mass which, seen in the specimen alone, would have been taken for suprarenal capsule if it had not been known where it came from. No primary growth was found in the suprarenal gland.

Dr. Harlow Brooks said that it was most interesting to study these cases and to try to find out what primary tumors of the lung were and where they started. He had studied three cases of so-called primary endothelioma of the lung, two of them so named with his half-hearted consent, and one with his vigorous opposition; he was absolutely sure this one was carcinoma. He thought these cases were too frequently called endothelioma because they were primary tumors of the lung; and perhaps this was because the best work in this line had been done by a man who believed in endothelioma with all his heart. He had been glad to hear Dr. Schultze's explanation of this tumor. Dr. Brooks said it was necessary to consider in primary tumor of the lung the embryological epithelium from which the lung is developed—air sacs—derived from a type of epithelium—endoderm—which does many curious things, as in the intestine, liver and other organs similarly derived. When one comes to the new growths, such as endothelioma, it must be remembered that tumor cells are to be dealt with, which, from an embryological standpoint, are apt to produce very variable tissues even in the normal. Dr. Brooks did not think the average primary tumor of the lung was an endothelioma, but he was not prepared to say all were not endothelioma.

Dr. Biggs asked as to the experience of others in regard to the malignancy of hypernephromata. Personally he had never seen metastasis or recurrence and he was inclined to give a favorable prognosis if the tumor were sharply outlined and not large.

Dr. Schultze said that in a case at Mt. Sinai Hospital of a pulsating tumor of the ilium diagnosed clinically as aneurism, exploratory incision revealed a mass containing blood. The microscopical diagnosis made by Dr. Mandlebaum was perithelioma. Such metastases of hypernephroma in bone were not so frequent. Struma suprarenalis (hyperplasia of adrenal cortex) he considered not so uncommon if the adrenals were systematically examined. Hypernephroma of the kidney was occasionally found, apparently having no connection with the cause of death.

Dr. Brooks said that he had had two cases last year; one in the Montefiore Home and one in the Fourth Division of Bellevue. The first was diagnosed ante mortem and showed the extremely rare metastases in the corpora cavernosa. He did not think them so uncommon if one looked out for them.

Dr. F. C. Wood said that he had seen a tumor of this type removed from a patient at St. Luke's Hospital. The tumor had occupied the upper lobe of the kidney and was of very considerable dimensions and filled with fluid blood. The inner surface of the tumor was covered with a shaggy mass of new growth. Evidently there had been a hemorrhage in the substance of the tumor with consequent destruction of the cells and the formation of the cyst. The patient had gone five years without a recurrence.

Dr. Schultze said that it seemed strange that the case with the adrenal metastasis in the inferior vena cava had not shown more marked effects of interference with circulation.

BOOK REVIEWS.

THE EYE, Its Refraction and Diseases. By EDWARD E. GIBBONS. The Macmillan Company, New York.

IT may occur to some who have approached the domain of optical science through the practice of medicine that only a few of the books whose subject-matter is described by the above title, have given sufficient relative importance to that part which is devoted to refraction, the optical matter being often much curtailed or perhaps written in by some one whose name does not appear on the title page and whose interest in the book is a matter of rather secondary importance.

To say that the author of this volume has in no way underestimated the importance of the optical side of the subject is to very much understate the case. The whole book is Physiological Optics pure or applied from beginning to end. The author justly refers to the optical inadequacy of the ordinary text-book as a sufficient reason for the production of this. But the subject-matter of the book deals so little with diseases of the eye in the ordinary acceptation of the term that one wonders why the word disease appears on the cover or

the title page. This criticism is not made in a fault-finding way but merely to call attention to the fact that the diseases referred to are in general not of the inflammatory type. One can hardly find fault with the classification that places refraction anomalies and muscular insufficiencies under the head of disease, but a treatise on diseases of the eye which includes no other kind and makes no apology or explanation for the omission might be very disappointing to one who thought to read its character from its title page.

The first seventy-five pages of the book are occupied with geometrical optics, including the theory of lenses and optical systems, according to Gauss. The author has succeeded admirably in giving just about that amount of mathematical work which is found necessary and sufficient for a brief but accurate presentation of the subject. Illustrative examples are given from the eye itself, so that one acquires in the reading a familiarity with the dimensions and constants with which he is to be subsequently concerned. After this, in somewhat logical order, come those matters which should find place in a text-book introductory to Physiological Optics. At the same time the situations that must be met by the refraction-optician and oculist are presented and most of the known methods of procedure described. The book is not exhaustive but it is wise and is probably about as good as could be presented to the particular class of readers for whom it was written. The courtesy of the instrument maker has helped out a good deal with the illustrations. The letter press is good and the algebraic and geometric parts are as free from misdrawing and printers' errors as could be expected in a first edition.

TEXT-BOOK OF OPHTHALMOLOGY. By Dr. CHARLES H. MAY (Grundriss der Augenheilkunde, von Dr. Charles H. May, Chef der Augenklinik, med. Abteilung, Columbia Universität, New York. Autorisierte deutsche Ausgabe für deutsche Studierende und Aerzte. Bearbeitet von Dr. E. H. OPPENHEIMER. Verlag von August Hirschwald, Berlin.

MAY'S excellent book has been given the compliment of a German translation, and in its new guise compares very favorably with any of the smaller German books that we have seen. It is not essentially different from the English edition which has been favorably commented upon in these columns. We trust it will have a successful career.

WILLIAM PEPPER, M.D., LL.D. By FRANCIS NEWTON THORPE. J. B. Lippincott Company, Philadelphia and London.

IN the general news columns of this publication, a few weeks ago, mention was made of a Life of Dr. William Pepper, late Provost of the University of Pennsylvania. Since that time a copy has come to hand and has been perused with an increasing delight. The biographer is Mr. F. N. Thorpe, concerning whose experience in this difficult form of authorship the reviewer has no knowledge. Suffice it to say that he seems to have his subject well in hand and deals fairly not only with the personality of his sketch but with the medical profession as a whole. So often are the lives of great men held in the balance of extreme prejudice or equally extreme admiration by the authorized reviewer that one must be prepared to take either praise or blame *cum grano salis* and decide for himself as to the real character of the individual, in the light of cold impartial analysis. This fact was known to no one better than to Carlyle, yet as a biographer he will never stand preeminent because of his excessive and almost unavoidable prejudices, and, strange to say, that he, too, has suffered most reprehensibly at the hands of those who, while claiming to know him so well, really understood his eccentricities so ill.

The subject in question, however, must have presented a different problem to his essayist, for if the life of any prominent man is ever intimately known to the general public, here is a case in point. Dr. Pepper was truly a man of works, but he was also a man of faith, combining well the qualities which the Biblical paragrapher laid down as indispensable. He belonged to that strictly limited class of men which Emerson was pleased to call "representative"—representative because of his greatness of heart and mightiness of mind. Standing at the head of his profession in America, he was a pioneer among those who have compelled the respect of foreigners and have made known unto all nations the breadth of vision and sincerity of purpose so characteristic of American effort in the field of medicine and surgery. But he was more than a physician, more than a mere teacher in a great school; he was also a man of affairs. His life work finished at fifty-three, it is remarkable how much he accomplished in all lines of activity during that short period of time. The list of municipal affairs with which he was prominently identified is a long one, and to name the acts of kindness performed to individuals who happened under his care would be impossible even for himself were he living. Perhaps more impossible for himself than for anyone else; for seldom were his alms done in public, and never with the hope of attracting attention, a rule which many philanthropists of to-day seem to neglect in bestowing their benefits.

This life, then, is one worthy of study by all aspiring members of the medical profession. As recorded in the volume lying before the reviewer, it is worthy of a prominent place among those books which are loved best and read most often.

HOW TO ATTRACT AND HOLD AN AUDIENCE. A Popular Treatise on the Nature, Preparation and Delivery of Public Discourse. By J. BERG ESENWEIN, A.M., Lit.D., Professor of the English Language and Literature in the Pennsylvania Military Cottage. Hinds & Noble, New York.

IT has often been said that physicians, as a rule, fail much more than other professional men, to make any proper impression when called upon to speak in public. This little book, which gives some practical hints with regard to the making of addresses, may then be of use. It is meant rather for the public speaker who makes public speaking a business, but it can well serve the purpose of the man who makes only an occasional address and in these later days, physicians are being called upon more and more to express themselves before public audiences on such popular medical questions as regard sanitary regulations and medico-educational problems. The book is especially valuable for its directions with regard to the avoidance of mannerisms that so often make the untrained speaker a source of discomfort rather than of pleasure to his audience.

DISEASES OF THE NERVOUS SYSTEM. By H. OPPENHEIM. Second American edition. Translated and edited by EDWARD E. MAYER, A.M., M.D. J. B. Lippincott Company, Philadelphia and London.

OPPENHEIM'S LEHRBUCH has represented the best of the German text-books of neurology and in its present second American dress it will find many old friends and gain, we hope, a number of new ones. The present edition represents the third German edition, published only last year. Of the general scope of the work it is not necessary to speak. In its 953 pages it tells all that

the practitioner of medicine needs to know about nervous diseases, and tells it very well. We can cordially recommend it, particularly to the inmates of sanitaria and institutions where nervous cases congregate and usually are so little studied.

ADOLESCENCE, Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education. By G. STANLEY HALL, Ph.D., LL.D., President of Clark University and Professor of Psychology and Pedagogy. Two volumes, 8vo. D. Appleton & Co., New York.

ENCYCLOPEDIA of youth it might well be called. Encyclopedic it is in its information concerning the years which immediately precede and follow puberty. No period of life equals in practical import that of adolescence; yet the results of the investigation of it have been hitherto scattered and inaccessible. The teacher, the physician, the parent, the student of social problems has long asked in vain for such a work as Dr. Hall now gives us. Beginning with growth in height and weight, the normal curves are established and the significance of variations from them pointed out. The growth of parts and organs, of motor power and function are taken up with elaborate detail.

The chapters on adolescent diseases of body and mind, on juvenile faults, and on sexual development, its dangers and hygiene, are those of greatest practical medical interest. Ordinarily, the physician's militant criticism of writings on these subjects by laymen is justified. But in these chapters the present author shows himself conversant with the most advanced scientific thought, and has adopted opinions of his own of rare sagacity.

The second chapter concerns itself with the more purely psychological characteristics, such as love, attitude toward nature, social instincts, intellectual education, etc.

The book is evidently the product of years of wide reading and of acute observation. Behind it all is the philosophic purpose to establish genetic ideas of the soul which marks an extension of evolution into the psychic field.

A MANUAL OF CLINICAL DIAGNOSIS, by Means of Microscopical and Chemical Methods, for Students, Hospitals, Physicians and Practitioners. By CHARLES E. SIMON, M.D. Fifth edition, thoroughly revised and enlarged. Lea Brothers & Co., New York and Philadelphia.

DR. SIMON'S book well merits the popularity which it has achieved and which brings it to its fifth edition in eight years. Some idea of how carefully the book is brought up to date may be gathered from the additions made to the present volume. A new section, for instance, deals with the cryoscopic examination of the blood; a section had been added on paratyphoid fever and on gonococcus septicemia, as well as on bubonic plague and spotted fever. Now that animal parasites are attracting so much attention, new matter has been very seaonably added with regard to the various intestinal parasites and a special section has been devoted to trypanosomiasis. The colored plates in this edition would seem to come as near being absolute pictures in their natural colors of phases of blood work as it is possible to procure.

It is an encouraging feature of the present state of medical literature in this country to find that Dr. Simon's book is so thoroughly appreciated. The appreciation is a deserved tribute to unceasing watchfulness in keeping his work so closely in touch with real progress in practical medicine that it is a mirror of the condition of clinical diagnosis at the time of each revision and will undoubtedly, as such, prove a precious landmark for those who in the future will want to trace the introduction of various new methods into medical teaching.

BOOKS RECEIVED.

A GUIDE TO THE CLINICAL EXAMINATION OF THE BLOOD. By Dr. R. C. Cabot. 8vo, 550 pages. Illustrated. Wm. Wood & Co., New York.

ANNUAL REPORT OF THE SURGEON GENERAL PUBLIC HEALTH AND MARINE HOSPITAL SERVICE. 8vo, 572 pages. Illustrated. Washington, D. C.

THE MOTHER'S MANUAL. By Dr. Emelyn L. Coolidge. 12mo, 253 pages. A. S. Barnes & Co., New York.

CLINICAL MICROSCOPY AND CHEMISTRY. By H. Lenhartz. Translated by H. T. Brooks. 8vo, 412 pages. Illustrated. F. A. Davis, Philadelphia.

DIE BUCHFÜHRUNG IM APOTHEKENBETRIEBE. By Drs. J. Barber and V. Schestauber. 8vo, 72 pages. Illustrated. A. Hartleben, Vienna and Leipsic.

ROENTGEN-RAY DIAGNOSIS AND THERAPY. By Dr. Carl Beck. 8vo, 460 pages. Illustrated. D. Appleton & Co., New York.

COMPENDIUM OF CHEMISTRY. By Dr. C. R. Arnold. Translated by Dr. J. A. Mandel. 8vo, 627 pages. John Wiley & Sons, New York.

PRELIMINARY BULLETIN ON INSECTS OF THE CACAO. 58 pages. Illustrated. C. S. Banks, Manila.

A MANUAL OF MATERIA MEDICA AND PHARMACY. By Dr. E. S. Muir. Third edition. 8vo, 190 pages. F. A. Davis, Philadelphia.

WHAT WE OWE TO EXPERIMENTS ON ANIMALS. By Stephen Paget. 12mo, 72 pages. Scientific Press, London.

A CASE AGAINST ANTIVIVISECTION. By Stephen Paget, 12mo, 104 pages. Scientific Press, London.

MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS. By Dr. C. D. F. Phillips. Third edition. 8vo, 921 pages. Longmans, Green & Co., New York and Bombay.

BERICHT ÜBER 137 GALLENSTEINLAPAROTOMIEN. By Dr. Hans Kehr. 8vo, 315 pages. J. F. Lehmann, Munich.

DER EINFLUSS VON BODEN UND HAUS AUF DIE HÄUFIGKEIT DES KREBSES. 8vo, 146 pages. J. F. Lehmann, Munich.

A PRACTICAL TREATISE ON MEDICAL DIAGNOSIS. By Dr. J. H. Musser. Fifth edition revised. 8vo, 1213 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.

TRANSACTIONS OF THE AMERICAN CLIMATOLOGICAL ASSOCIATION. 8vo, 264 pages. Illustrated. Philadelphia.

LE MALATTIE DEI PAESI CALDI. By Dr. C. Muzio. 12mo, 560 pages. Illustrated. Ulrico Hoepli, Milan.

ELETTRICITA MEDICA. By Dr. A. D. Bocciardo. 12mo, 201 pages. Illustrated. Ulrico Hoepli, Milan.

LA RACHITIDE. By Dr. P. Mancini. 12mo, 300 pages. Illustrated. Ulrico Hoepli, Milan.

TREATISE ON DISEASES OF THE SKIN. By Dr. H. W. Stelwagon. 8vo, 1014 pages. Illustrated. W. B. Saunders & Co., New York, Philadelphia and London.

BURDETTE'S HOSPITALS AND CHARITIES. 1904. By Sir Henry Burdette. 8vo, 1029 pages. The Scientific Press, London.

PEDIATRICS. By D. H. E. Tuley. 12mo, 266 pages. Illustrated. Lea Brothers & Co., New York and Philadelphia.